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PAPER TRADE JOURNAL

MARCH 21, 1946

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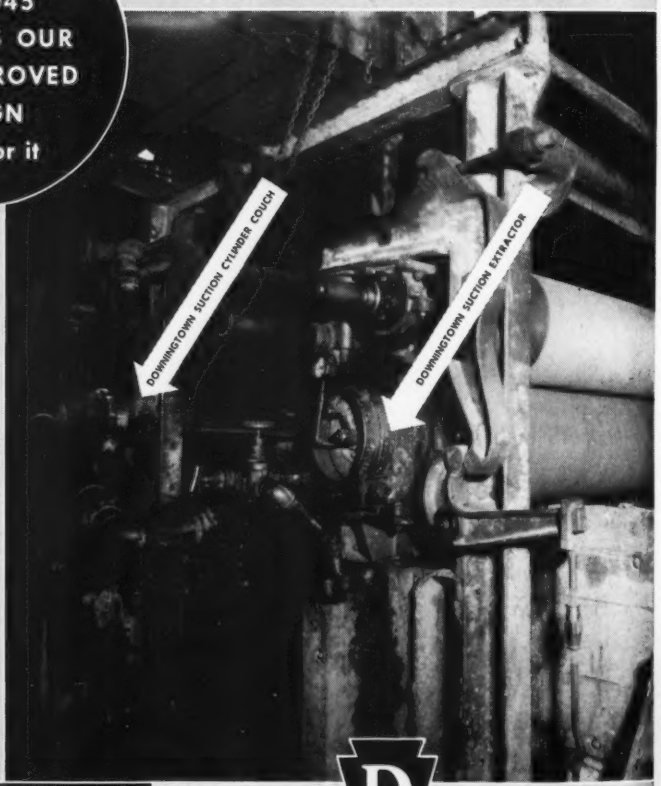

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PAPER TRADE JOURNAL

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GEO. E. LOCKWOOD
President and Treas.

ARTHUR E. GORDON
Vice-President

JOSEPH P. HORGAN
Secretary

HENRY J. BERGER
Editor Emeritus

W. L. COOK
Editor

STILLMAN TAYLOR
Associate Editor

R. G. MACDONALD
"TAPPI" Editor

F. B. GROSSE
Make-Up Editor

LYNNE M. LAMM
Washington Correspondent

Western Representatives:
H. K. VINTON
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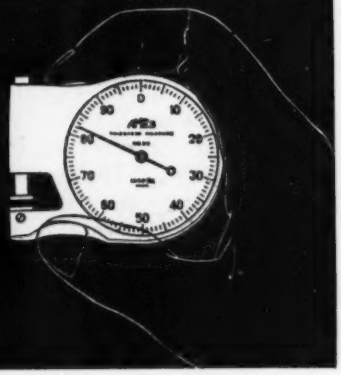

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Vol. 122, No. 12

PAPER TRADE JOURNAL

Title Reg. U. S. Pat. Off.

March 21, 1946

Mill Shipments Are Improving in Midwest

Chicago Reports Actual Delivery of Paper Is Better But With No Material Increase In Supply — Western Salesmen Announce Committee Chairmen—Paper Stock and Rags Market Continues Active.

CHICAGO, Ill., March 18, 1946—Whether it was the nearness of the Spring season or the hope that production would soon increase, the Chicago trade evidenced more optimism than usual this week. There was no material increase in the amount of goods available to the consumer trade but mills were reported as making good use of new found elasticity in their planning and, in many cases, actual delivery. Local jobbers reported conditions continued tight with volume continuing at an extremely high level. Prices were reported at the OPA "top" in all grades with particular emphasis on all grades of sulphites, mimeos, book and cover papers.

Waste paper, secondhand bags and many grades of waste rags continued to find an active demand, according to reports in this vicinity. Ceiling prices were maintained. One reporter indicated that collections at some points were just a shade better but at others there was no improvement despite unusually good weather. Old Newspaper still was in the worst predicament as far as supply is concerned. A heavy demand was reported for second hand bags, with what supplies there were taken up very quickly.

New Mathieson Sales Manager

Nelson F. Wilmot is reported to have recently been appointed Chicago district sales manager of Mathieson Alkali Works. Headquarters of the company are at 410 N. Michigan Avenue.

Announce Salesmen's Chairmen

Ed Edwards, Howard Paper Company, recently elected vice president of the western division of the Salesmens Association of the Paper Industry, is letting no grass grow under his feet in getting his new program under way. At the regular meeting on Monday noon, March 11, Mr. Edwards announced the following committee chairmen for the forthcoming year: Social, Ben K. Babbitt, Brown Company and perennial arranger of things delightful for the SAPEYES; Placement, Paul Joslin, M. & O. Paper Company; Golf, with an assistant yet to be named, J. C. Keeney, Kimberly-Clark Paper Company; Membership Committee, Henry C. Engel, Central Paper Company and A. G. Hulburt, District of Columbia Paper Company. The new vice president also announced that the western division would make an effort to hold at least one open meeting a month for members and their guests and set up chairmen for the three coming months as follows: April, Joseph T. Daly, Wrenn Paper Company; May, Graham C. Olson and Ralph Burnett, American Writing Paper Company; June, J. H. Coy and Forrest D. "Pat" Patterson, Flambeau Paper Company. It is interesting to note that it didn't take Mr. Edwards long to put to work Pat Patterson, recenly elected president of the Salesmens Association of the Paper Industry.

King Moves To Own Building

Charles C. King & Company, coarse paper jobbers, recently moved into its own building at 822 N. Sangamon street. The company distributes a representative line of coarse paper, paper products and twines.

Approve Building Code

The Chicago city council has approved a wood frame and wall board building code which builders predict will encourage building of 300,000 low cost homes. This week, and at the last minute during the council proceedings, the code was revised by substituting a new draft of the section on wallboard and ceiling finish. This is the section intended to settle, for the emergency at least, the historic strife between lath and plaster and plaster board and the action was taken care of by setting up fire resistance ratings as established by the United States Bureau of Standards. Any material that meets these requirements will be approved by Chicago. This news will be of interest to that great segment of the paper trade interested in this type of product.

Wisconsin River Rising

Indications late last week were that ice in the Wisconsin River would break up early this week, a few days before the date, March 22, predicted by officials of the Wisconsin Valley Improvement Company.

Rains and snow melted by springlike temperatures caused the Wisconsin River to rise toward flood level. The Wisconsin's rate of flow at the Consolidated Water Power and Paper Company's dam at Wisconsin Rapids, Wis., had increased to 20,000 cubic feet per second on March 14, compared to the normal wintertime flow of 4,000. Ernest Belter, Consolidated power engineer, said the flow was not expected to exceed 25,000 cubic feet barring further rainfall.

Lagerpusch Joins Mando

H. H. Lagerpusch has been named supervisor coating division of the research department of Minnesota and Ontario Paper Company at International Falls.

Kimberly-Clark Buys Government Plant

Will Convert Former Bomber Works At Memphis, Tenn., To Make New Products — Paper Institute Acquires Dormitory Building — Marinette Gives Safety Awards — Woods Group Elects Becker.

APPLETON, Wis., March 18, 1946—Kimberly-Clark Corporation, Neenah, Wis., announced March 13 that it has purchased a government-owned plant at Memphis, Tenn., in which it will install machinery to manufacture creped wadding products. The sale is subject to final approval by the War Assets Corporation of the government.

During the war the plant, which contains about 600,000 square feet of floor space, was used by the Fisher Memphis Aircraft division for the manufacture of B-25 bomber parts. Company officials estimate that it will take about a year to reconvert the plant and to install machinery for the new products. The location and facilities are considered readily adaptable to Kimberly-Clark requirements.

Cola G. Parker, president of Kimberly-Clark, said that the project is a part of the corporation's postwar program which has been generally outlined in recent months to employes of the corporation and to local communities.

Mr. Parker said that national demand for products manufactured by the corporation has outstripped production and that best insurance toward long-term growth and prosperity lies in the company's ability to fill as much of that demand as is economically possible. He said that southern distribution and markets indicate why the corporation requires the Memphis location if it is successfully to meet competition. He said the Memphis plans, when they mature with other of the company's planning for expanded growth, will put Kimberly-Clark's overall operations on an increasingly sound basis.

Paper Institute To Have Dormitory

The Institute of Paper Chemistry has purchased a large house on East College avenue at Appleton, Wis., for use as a dormitory for unmarried students, it was announced last week by Westbrook Steele, executive director of the Institute. The house will be remodeled and refurnished before being used as a dormitory.

"Throughout its 16 years of operation, the Institute has provided dormitory facilities for all its students," Mr. Steele said. "In the past these facilities have been leased. The acquisition of the (George H.) Mory property represents, therefore, a step toward the permanent solution of the Institute's student housing problem.

"When we bought this property, it made it possible for us to release North House, which we had been renting from Lawrence College, so that the college might use it to house returning veterans who were attending Lawrence. The new facilities, together with the Quonset huts which are being supplied through the FPHA, East House and West House, which we are renting from Lawrence, certainly will answer our currently most pressing dormitory problems."

Marinette Gives Safety Awards

Safety awards won by the Marinette Paper Company and its employes were made March 12 at a banquet at Hotel Marinette, Marinette, Wis., attended by 70 persons, chiefly members of the supervisory force and safety committee of the company.

The principal speaker at the program, which was devoted almost entirely to safety, was F. W. Braun, vice president of the Employers Mutual Insurance Company, Wausau, Wis.

Einar T. Martenson, safety supervisor of the company, was toastmaster. He introduced R. C. Mateer, president of the company, who came to Marinetter from Chester, Pa., to attend the banquet. Mr. Mateer spoke briefly, congratulating the group on its safety record.

D. B. Wilkinson, vice president of the Marinette Paper Company and general manager of the Marinette plant, presented numerous awards received by the local mills from the United States Department of Labor and the National Safety Council in recognition of the outstanding achievement in reducing accidents. The awards were accepted by the safety committee chairmen, Edward J. Walk, Clarence R. Kronquist and Harry E. Munson. Mr. Munson made the acceptance speech.

The Marinette plant was awarded a plaque, won in competition with the other mills of the Scott Paper Company, of which Marinette is a subsidiary.

To Discuss Safety in the Home

"Safety in the Home" will be the subject discussed by F. W. Braun, president of the Wisconsin Council of Safety and vice president of the Employers Mutual Insurance Company, Wausau, Wis., at the final meeting of the 1945-46 year sponsored by the Twin City Safety Council. The meeting will be held Tuesday, March 19, at Menasha High School, Menasha, Wis., and will be open to the public. Mr. Braun will show a short movie after his talk.

Another speaker will be Kurt Singer, former European newspaperman, who will talk on "Russia at the Crossroads."

Folke Becker Reelected President

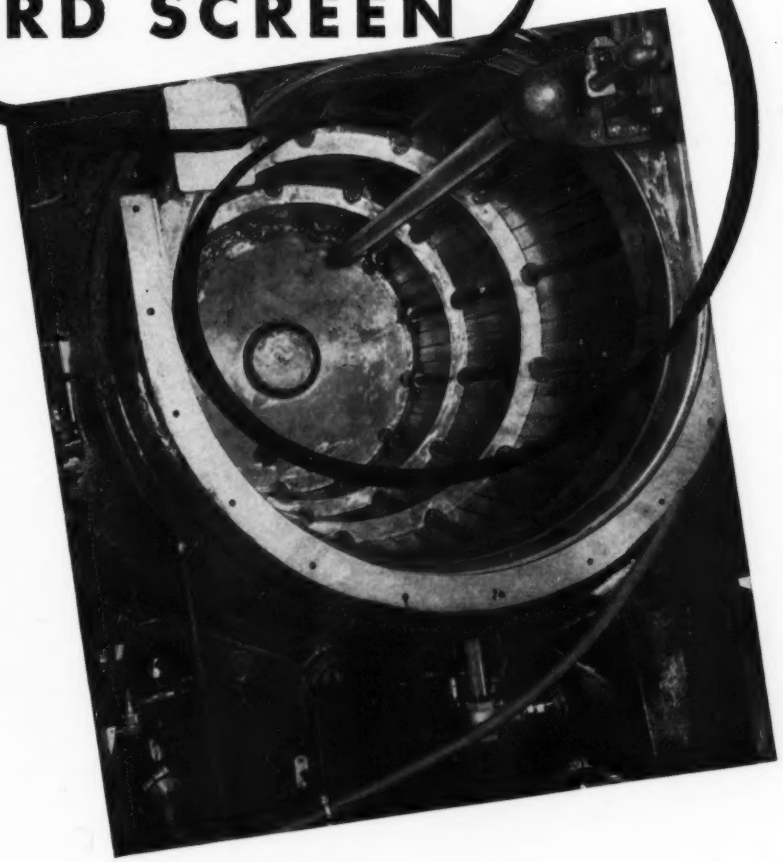
Folke Becker, Rhinelander, Wis., president of the Rhinelander Paper Company, was reelected president of Trees for Tomorrow, Inc., at a board of directors' meeting at Merrill, Wis., on March 13, after the annual meeting.

Other officers elected were S. B. Bugge, Tomahawk, and E. B. Hurst, Wisconsin Rapids, vice presidents; M. N. Taylor, executive director; D. B. Smith, Merrill, secretary-treasurer. Other directors are D. C. Everest, Harold Collins and E. E. Zahn, Wausau; Norman S. Stone, Mosinee; Stanton W. Mead, Wisconsin Rapids; A. J. Schierl, Stevens Point; K. S. Dickinson, Tomahawk; and Robert Caldwell, Rhinelander.

Trees for Tomorrow announce last week that requests for free seedling trees under the "two for one" program will close this spring on March 23. Under the program small trees are supplied farmers and woodland owners as a direct method of replacing trees cut during the critical war years. The organization is composed of Wisconsin River Valley paper mill executives.

Something **NEW** has been added to the

BIRD SCREEN



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Outlook for More Newsprint is Brighter

Newsprint Association of Canada Report of Production At 90.8% For January Basis of Optimism For Larger Supply This Year — Demand For Overseas Newsprint Increasing — Other Mill News.

MONTREAL, Que., March 14, 1946—A report by the Newsprint Association of Canada that Canadian mills operated at 90.8% of capacity in January, and an unofficial statement that operations continued at around that basis in February, have aroused optimistic comment in the press here in regard to the possibility of a somewhat larger supply of newsprint becoming available during the present year than previous estimates had provided for. This view is bolstered by the fact that reports from the pulpwood camps regarding the amount of wood cut to date are more favorable than last year at this time, despite the number of woodsmen remaining lower than the level aimed at.

Production in relation to capacity is now at the highest point in years. At a total of 328,414 tons in January, it represented an increase of 63,648 tons, or 24.0%, over January, 1945, and 120,032 tons, or 57.6%, more than in January, 1939. The percentage to capacity of 90.8% compares with 79.6% in December, 1945, 73.2% in January, 1945, and 59.8% in January, 1939. Here are the totals of production for the period 1935 to 1945 inclusive:

Year	Tons
1935	2,735,000
1936	3,247,000
1937	3,654,000
1938	2,516,000
1939	2,861,000
1940	3,435,000
1941	3,454,000
1942	3,209,000
1943	3,010,000
1944	3,001,000
1945	3,259,000

In 1945 the deliveries to the United States amounted to 2,544,116 tons, and at present the industry is working on an estimated delivery to the United States of 3,000,000 tons for 1946 out of a total estimated production of 3,696,000 tons, which would represent an output of 86% of rated capacity, as compared with an average output of 75.8% in 1945, an average that was exceeded but twice, and that only slightly, since 1939.

Many "Ifs" in the Outlook

While production in relation to capacity has reached a new high in the first two months of this year, producers are more cautious than the press commentators in building hopes upon it, and emphasize that there are too many "ifs", especially in regard to wood supply, to warrant any more use of newsprint by consumers than at present, certainly until it is known whether or not conditions affecting the spring river drives will permit full delivery of the present season's cut to the mills. Paul Kellog, general manager of the Newsprint Association of Canada, while reiterating confidence that Canada will be able to maintain shipments to the United States at the rate of 3,000,000 per annum, emphasizes that all the wood which the mills are now using was cut at least a year ago, and some of it two years ago, and says that newsprint supply will be tight for another year yet, as the industry will not be completely free from the influence of wartime conditions governing procurement of raw materials until the middle of 1947.

Improvement of production in relation to capacity had been anticipated by the Newsprint Association in estimating shipments to the United States for 1946, and while the ratio is on the increase, the warning to U. S. consumers which it issued in December last still stands. This warning is as follows: "Maximum production over a period probably could not exceed 96% of rated capacity. Maximum improvement over the production which we have estimated at 86% of capacity for 1946 would therefore be about 400,000 tons, to meet obligations in all markets. Even if this maximum could be achieved in the second half of 1946, which is highly doubtful, improvement in the half year could not exceed 200,000 tons."

Newsprint for Overseas

Circumstances seem to dictate that whatever extra tonnage of newsprint can be produced over and above the increased tonnage that has been agreed upon this year for the United States will be allocated to overseas markets. Overseas buyers are clamoring for increased shipments. In addition there is the desire of Canadian producers to hold their historic overseas markets and at the same time to get a foothold in markets in which hitherto they have not figured largely. This latter applies in particular to markets in Central and South America.

The Minister of Trade and Commerce has just returned from an extensive tour of the latter countries, and he has called on exporters to make a determined effort to meet the opportunities in these countries. He found everywhere urgent demands for Canadian goods and for exchange of all sorts of commodities with Canada. He especially referred to the demands for newsprint, wrapping papers and machinery, and has called on Canadians to make a real effort to meet these demands, if only by way of token shipments for the time being.

There is every indication that his wishes will be carried out. Already one of two ships monthly, packed to the tops of their hatches with Canadian products, will sail from Montreal to South American ports after the opening of navigation next month. Previously only half a ship monthly could be loaded with Canadian goods. It is planned to use 10,000 ton freighters in the business. They will include among their ports of call ports in Brazil, Uruguay and Montevideo.

Meanwhile reports just available of shipments of newsprint overseas in January show a sharp rise in shipments to the United Kingdom, which for the month totalled 20,342 tons, as compared with monthly totals of around 5,000 or 6,000 tons in recent previous months. There was also a substantial increase in shipments to Australia, which amounted to 9,687 for January, or almost double the total that has been going forward in previous recent months. Altogether the total overseas shipments in January was 291,702 tons, or some 90,000 tons more than in January, 1945.

E. M. Little Heads Anglo-Newfoundland

E. M. Little, president and general manager of the Anglo-Canadian Pulp and Paper Mills of Quebec

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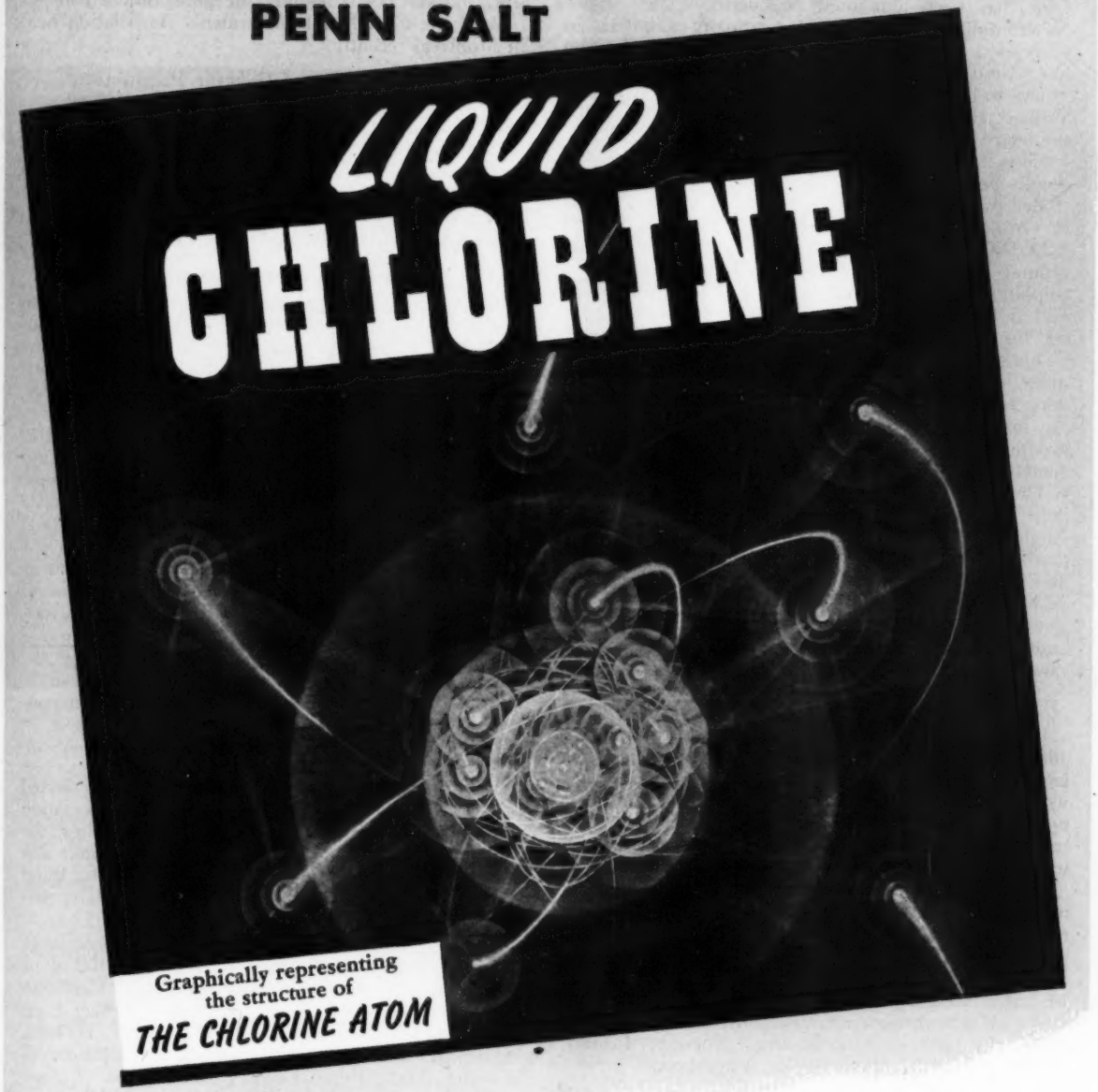

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and of the Gaspesia Sulphite Company, of Chandler, Que., has been appointed president of the Anglo-Newfoundland Development Company Limited, in succession to Frank J. Humphrey of New York, who has retired from the active direction of the company's affairs to become chairman of the board of directors. Wilbert H. Howard, K. C., of Montreal, has joined the board of directors.

Like the Anglo-Canadian Pulp and Paper Mills, Anglo-Newfoundland Development Company is controlled by the Rothermere interests. The latter's plant at Grand Falls, Newfoundland, has a capacity of 1,200,000 lbs. of newsprint per day, 600,000 lbs. of ground wood pulp and 280,000 lbs. of unbleached sulphite fiber. The company also has a ground wood mill at Bishop's Falls, Nfd., with a capacity of 400,000 lbs. of ground wood per day, the whole of which is pumped to the parent plant at Grand Falls, 12 miles away, through a pipe line. The company has done considerable work in enlarging its pulp-producing properties during the war years to diversify its products and to increase the tonnage for sale of dry ground wood and sulphite pulp.

The company has extensive interests outside the pulp and paper mills. It owns the capital stock of Anglo-Newfoundland Steamship Company and 98% of the issued shares of Terra Nova Properties Limited, which holds mineral rights over an area of 2,230 square miles, and operates, jointly with American Smelting and Refining Company, a subsidiary known as Buchans Mining Company having a daily capacity of 1,200 tons of lead and zinc.

Steady Progress in Paper Industry

Conditions in the pulp and paper industry in Canada are steadily progressing towards normal. The latest indication is that newsprint, fine paper, and wood pulp are included in a list of over 300 items upon which the Government has removed export control restrictions "when shipped to countries with which Canada has had normal trade in the past."

This new order, which cuts from 1,000 to 700 the number of items on which export controls are now required, allows export without permit to the following areas: British Empire and its protectorates; United States and its possessions and protectorates; 19 Latin-American nations; China, Egypt, Iran and Iraq; also to France, Netherlands, Czechoslovakia, Denmark, Greece, Luxembourg, Norway, Poland, Turkey, U.S.S.R., Vatican City, Yugoslavia.

Sales Through Export Board

Producers of paper and pulp have been benefiting by the opportunities offered by the Government for marketing their products overseas through the Canadian Export Board. This Board acts as the intermediary for agents of other governments wishing to make purchases in Canada by giving them a chance to do their purchasing through an official and non-profit body.

During the last two years $366,000,000 of Canadian products have been sold by this Board, the chief buyers being France, UNRRA, Belgium, Australia and the Netherlands, with many other countries taking lesser amounts. The commodities thus purchased include paper products to the value of $10,183,000 and wood pulp to the value of $3,866,000.

Lumbermen Urge Joint Action

Since lumber is an important phase of the business of many pulp and paper firms, representatives of that industry were among delegates numbering around 1,000 attending the 38th annual convention of the Canadian Lumbermen's Association held in Montreal recently.

Forests Capable of Greater Production

Guest speaker of the convention was Hon. J. A. Glen, Dominion Minister of Mines and Resources, who said that the forests of Canada could produce and sustain an even greater production than the record lumber output during the war, so long as they are managed as crops and adequately protected from fires, insects and tree diseases.

Pledges Federal Assistance

Before the meeting Hon. Mr. Glen visited the Pulp and Paper Research Institute in Montreal, accompanied by D. A. Macdonald, acting Dominion Forester. He discussed the Institute's program of research, as well as administrative matters, with Dr. Otto Maass, the director general, Dr. Boyd Campbell, in charge of technical research, and A. K. Koroloff, in charge of woodlands research, and in an interview afterwards said: "Our forest industries must play a major role in sustaining Canada's available balance of commodity trade. One of them, the pulp and paper industry, ranks as Canada's greatest manufacturing industry, standing first in export value as well as in value of production. The permanence of our forest industries depends on the continuing availability of raw materials, and the Dominion Government, which has a keen and vital interest in the future development of our forest resources, can be depended on to do all in its power to aid in conservation and research."

Officers Elected

Raoul Guerette, of Estcourt, Que., was elected president of the Canadian Lumbermen's Association for the ensuing year, to succeed D. A. Gillies, the retiring president. D. C. Johnston, Toronto, was named first vice-president and C. E. Smith, Blind River, Ont., second vice-president. Mr. LeClair, continues in his position as secretary-treasurer.

Chairmen of the six bureaus of the association, who will also be chief executives of the Board of Directors, are: H. E. Gill, of Montreal, Canadian Hardwood Bureau; N. F. Blair of Quebec, Canadian Spruce Bureau; Roy Halliday, of Toronto, Wholesale and Export Bureau; J. D. Branch, of Windsor, Ont.; Retail Lumber Bureau; K. O. Rose of Tee Lake, Que., White Pine Bureau; and Warren Nicholson, of Burlington, Ont., Woodworkers' Bur.

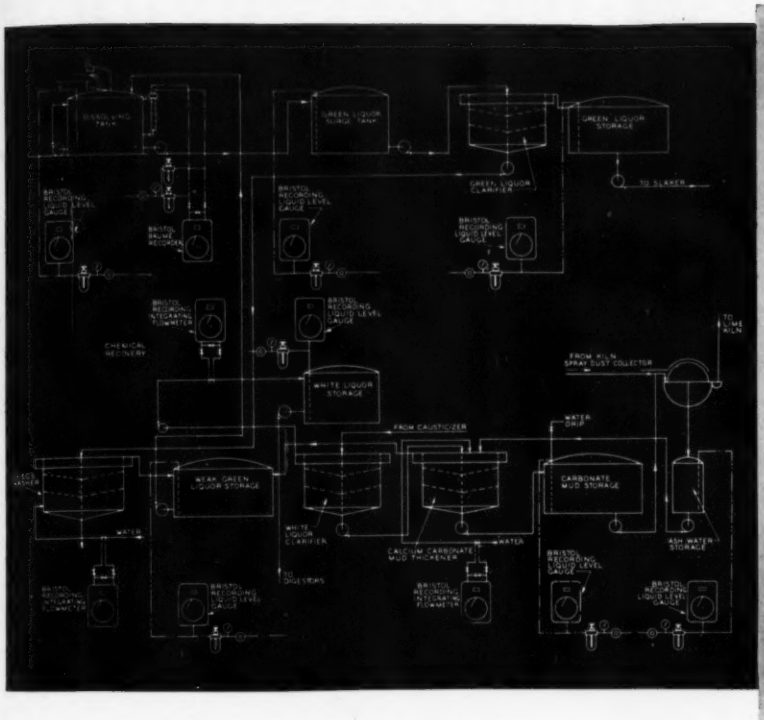
The British Newsprint Market

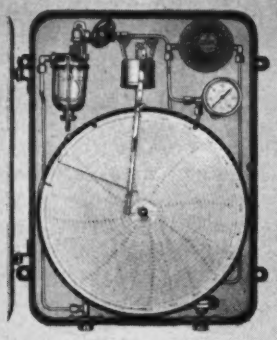
Representatives of the British Government have arrived in Ottawa with the object of negotiating a loan similar to that which has been arranged with the United States, and guesses are that it might run as high as $1,500,000,000.

With their arrival, senior trade officials at Ottawa forecast a definite easing of Great Britain's austerity program, at least as far as imports from Canada are concerned, within the next three months.

"One bright spot of the whole trade picture," says a press report from Ottawa, "is that Canada has managed to hold her own in the newsprint market in the United Kingdom. There has been considerable talk that this was going to go to Scandinavian countries. The talk now is that this is not so, at least not to the extent that had at first been feared."

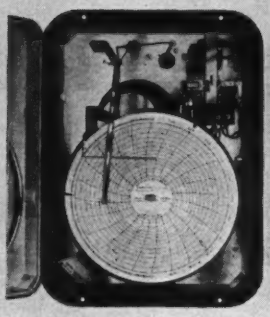
Making a Nice Recovery





Bristol Recording Liquid Level Gauge

Bubbler-type. For any liquid, corrosive or not



Bristol Integrating Flow Meter

Has integrating mechanism for total flow and recording mechanism for rate of flow

. . . Thanks to the prescriptions these Bristol Instruments write

Chemical recovery in the Kraft process is efficient in proportion to the control of such variables as flow, liquid level and specific gravity.

Using the charts on Bristol Recording Instruments as a guide to maintaining proper relationships between variables saves the chemical losses that might otherwise occur.

In the causticizing system shown above, Bristol instruments point out what needs to be done to keep the variables in balance at each important step in the process.

Thorough analysis of complete systems by qualified engineers often suggests methods of protecting quality, speeding production and eliminating waste. Have a Bristol Process Control Engineer survey your plant for opportunities where automatic recording or control of variables could improve quality and profits.

Write for general Bulletin DM006, addressing The Bristol Company, 148 Bristol Road, Waterbury 91, Conn. (The Bristol Company of Canada, Ltd., Toronto, Ontario. Bristol's Instrument Co., Ltd., London N.W. 10, England.)

BRISTOL

Engineers process control for better products and profits

AUTOMATIC CONTROLLING AND RECORDING INSTRUMENTS

Congressional Committee Opens Paper Bids

Proposals For Supplying the Government Printing Office With A Variety of Paper For the Three Months' Period Beginning April 1 Are Received Monday — To Consider the Awards On March 25.

WASHINGTON, D. C., March 18, 1946—Bids were received today by the Joint Congressional Committee on Printing for paper for the use of the Government Printing Office for the three-months period beginning April 1st. The Joint Congressional Committee will meet March 25th to consider awards. No bids were received on some specifications in the original list. The bids received today were as follows:

Machine-Finish Book

No. 3—150,000 lbs, 25x38—70; flat, cut any size, min. 21 ins., max. 48 ins.
Frank Parsons Paper Co. 8.92c

No. 4—300,000 lbs., 25x38—70; flat, cut 24x38, 28x38, and 38x48 ins.
Frank Parsons Paper Co. 8.92c

No. 5—300,000 lbs. 25x38—70; flat, cut 24x38, 28x38, and 38x48 ins.
Frank Parsons Paper Co. 8.92c

No. 7—300,000 lbs., 25x38—70; rolls, 19 and 38 ins. wide (3-inch fiber cores).
Mudge Paper Co. .....
Total 300,000 lbs. only
Lots 7 and 8 7.59c
Paper Corp. of U. S.....
Total 300,000 lbs. only
Lots 7 and 8 7.59c

No. 8—200,000 lbs., 25x38—70; rolls, 19 and 38 ins. wide (3-inch fiber cores).
Mudge Paper Co. .....
Total 300,000 lbs. only
Lots 7 and 8 7.59c
Barton Duer & Koch Paper Co. 7.59c
Paper Corp. of U. S. .....
Total 300,000 lbs. only
Lots 7 and 8 7.59c

Offset Book

No 19—500,000 lbs., 25x38—80, flat, cut any size, min. width 24 ins., max. width 48 ins., the grain to run lengthwise of the sheet.
Mudge Paper Co. .....
100,000 lbs. only 9.92c
Central Ohio Paper Co. .....
150,000 lbs. only 9.92c

Antique Book

No. 22—50,000 lbs., 25x38—90 and 120; flat, cut 33x43 and 38x50 ins.
Stanford Paper Co. 7.57c

50% Antique Book

No. 27—40,000 lbs., 25x38—80; flat, cut 22¾x31½ ins. (Shall be suitable for writing on with ink).
Aetna Paper Co. 16.94c

50% Laid Antique Book

No. 29—40,000 lbs., 25x38—140; flat cut 38x48 ins., the laid marks to run the 48-inch direction of the sheet; the grain and chain marks to run lengthwise of the sheet.
Aetna Paper Co. 17.19c

Supercalendered Book

No. 33—200,000 lbs., 25x38—90; flat, cut any size, min. width 24 ins., max. width 48 ins.

No. 34—800,000 lbs., 25x38—90; rolls, 28½ and 38 ins. wide (3-inch fiber cores).
R. P. Andrews Paper Co. .....
400,000 lbs. only 7.52c
Mudge Paper Co. .....
200,000 lbs. only 7.51c

Machine-Coated Book

No. 37—300,000 lbs., 25x38—100; flat, cut any size, min. width 24 ins., max. width 48 ins.
Barton, Duer & Koch Paper Co. 8.14c

No. 38—100,000 lbs. 25x38—120; flat, cut any size, min. width 24 ins., max. width 48 ins.
Barton, Duer & Koch Paper Co. 7.57c
Consolidated Water Power & Paper Co. 8.455c

Coated Book

No. 40—150,000 lbs., 25x38—140; flat, cut 32x42, 38x48, 39x50 and 41x52 ins.; the grain to run lengthwise of the sheet.

Dull Coated Book

No. 42—80,000 lbs., 25x38—140; flat, cut 28x41 and 32x42 ins.; the grain to run lengthwise of the sheet.

Chemical Wood Mimeographed, White and Colored

No. 45—1,500,000 lbs., white, No. 40; flat, cut 28½x34½, 32½x42½ and 38x48½ ins.; the grain: size 28½x34½ to run the 28½ in. way; size 32½x42½ to run the 42½ inch way; size 38x48½ to run the 38 inch way.
R. P. Andrews Paper Co. .....
200,000 lbs. only 7.91c
Barton, Duer & Koch Paper Co.
400,000 lbs. only 7.61c

No. 46—50,000 lbs., blue, buff, green, pink and yellow, No. 40; flat, cut 32½ x42½ and 38x48½ ins. Grains: Size 28½x34½ to run the 28½ in. way, size 32½x42½ to run the 42½ in. way; size 38x48½ to run the 38 in. way. Min. order, one color, 10,000 lbs.
Cauthorne Paper Co. 9.25c

25% Mimeograph

No. 47—400,000 lbs., No. 40; flat, cut 28½x34½, 32½x42½ ;34½x44; and 38x48½ ins.; the grain: size 32½x42½ to run the 42½ in. way; size 38x48½ to run the 38 in. way.
Aetna Paper Co. 9.53c
Old Dominion Paper Co. .....
200,000 lbs. only 10.08c
200,000 lbs. only 10.18c

Duplicator Copy Paper, Liquid Process, White and Colored

No. 48—200,000 lbs., white, No. 40; flat, cut 32x42 and 34x44 ins.; grain to run lengthwise of the sheet.
Stanford Paper Co. 10.50c

Blue U S M O Safety Writing

No. 50—150,000 lbs., No. 32; rolls, 22 ins. wide, 24 ins. in diameter (3-inch fiber cores).
D. L. Ward 13.44c

Chemical Wood Writing, White and Colored

No. 53—1,000,000 lbs., white, No. 32, flat, cut any size, min. width 21 ins., max. width 48 ins.
R. P. Andrews Paper Co. .....
200,000 lbs. only 8.49c
Cauthorne Paper Co. .....
200,000 lbs. only 8.50c
D. L. Ward Paper Co. .....
250,000 lbs. only 10.185c
Frank Parsons Paper Co. .....
500,000 lbs. only 8.49c
Whitaker Paper Co. .....
400,000 lbs. only 8.73c
Central Ohio Paper Co. 8.74c

No. 54—5,000,000 lbs., white, No. 40, flat, cut any size, min. width 21 ins., max. width 48 ins.
D. L. Ward Paper Co. .....
500,000 lbs. only 9.506c
Central Ohio Paper Co. .....
50,000 lbs. only
Lots 53 and 54 8.15c

No. 55—2,000,000 lbs., white, No. 32; rolls, min., width 16 ins., max. width 48 ins. (3-inch fiber cores).
R. P. Andrews Paper Co. .....
450,000 lbs. only 7.47c
Stanford Paper Co. .....
200,000 lbs. only 7.48c

No. 56—300,000 lbs., white No. 40; rolls, min. width 16 ins., max. width 48 ins. (3-inch fiber cores).

No. 57—80,000 lbs., colored, No. 26; flat, cut any size, min. width 21 ins., max. width 48 ins.
D. L. Ward Paper Co. 13.44c

No. 58—1,000,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, Nos. 32 and 40; flat cut any size min. width 21 ins., max. width 48 ins. Min. order, one color, 10,000 lbs.
D. L. Ward Paper Co. .....
(Sub. 16) 10.912c
(Sub. 20) 10.233c

Chemical Wood Writing (Titanium Dioxide Filled)

No. 61—400,000 lbs. No. 32; flat, cut 34x44 ins.
Barton, Duer & Koch Paper Co. 9.45c

Lithograph-Finish Map

No. 62—96,000 lbs., Nos. 32 and 40; flat, cut any size, min. width 22 ins., max. width 48 ins.

High Wet Strength Map

No. 63—416,000 lbs., No. 48; flat, cut any, size, min. width 22 ins., max. width 48 ins.; the grain to run lengthwise of the sheet.
Stanford Paper Co. .....
200,000 lbs. only 13.15c
Aetna Paper Co. 12.33c

50% Lithograph-Finish Map

No. 64—50,000 lbs., Nos. 32 and 40; flat cut any size, min. width 22 ins., max. width 48 ins.; the grain to run lengthwise of the sheet.
Aetna Paper Co. 14.98c
Barton, Duer & Koch Paper Co.
(Sub. 16) 16.70c
(Sub. 20) 15.70c

Chemical Wood Manifold, White and Colored

No. 73—70,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, No. 18; flat, cut 21x32, 22x34, 28x34, 32x42, and 34x44 ins. Min. order, one color, 5,000 lbs.
Graham Paper Co. 13.10c

BROUGHTON UNIT VACUUM CONTROL for paper machine suction boxes

Dependable control of flat-box vacuums.

Eliminates completely the flat-box vacuum pump.

Allows more water to be worked into the sheet.

In many installations helps decrease two sidedness because of maintained gradated vacuums. Much more uniform water-mark.

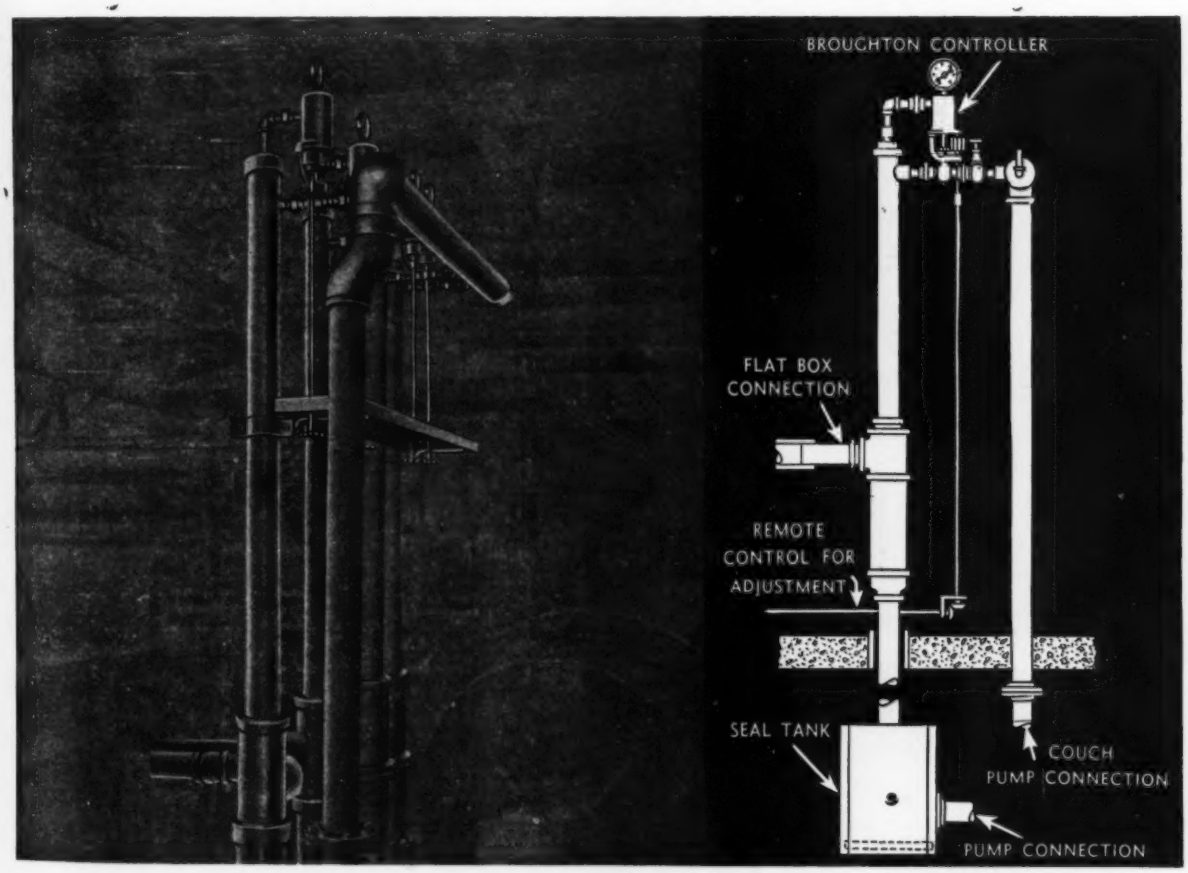
All adjustments may be made from the front of the wire.

The air and water are separated, the water falling by gravity into a seal tank. The individual vacuum breakers, a function of the Broughton Vacuum Controller, enters air in controlled amounts, into the boxes only, thereby diminishing enormously the amount of air handled as compared to all other systems now in use.

Endorsed by users.

Patented U.S. June 12, 1934—No. 1,962,477 ***Patented Canada March 5, 1935—No. 348,550***

Other Foreign Patents Applied For.



ARMY E NAVY

A. E. BROUGHTON & COMPANY

Manufacturers of mechanically operated Oscillating Showers, and Unit Vacuum Controls for paper machine suction boxes.

GLENS FALLS, N. Y.

50% Manifold, White and Colored

No. 76—150,000 lbs.; white, No. 18; flat, cut 21x32, 22x34, 28x34, 32x42, and 34x44 ins.

Paper Corp. of U. S. .....
150,000 lbs. only
Lots 76 and 78 24.63c

Old Dominion Paper Co. .....
60,000 lbs. only
Lots 76 and 78 23.998c

No. 78—60,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, No. 18; flat, cut 21x32, 22x34, 28x34, and 34x44 ins. Min. order, one color, 5,000 lbs.

Paper Corp. of U. S. .....
60,000 lbs. only
Lots 76 and 78 25.58c

Old Dominion Paper Co. .....
60,000 lbs. only
Lots 76 and 78 24.748c

50% White Glazed Manifold

No. 85—60,000 lbs., No. 16; flat, cut 28x34 ins. Min. order 20,000 lbs.

Barton, Duer & Koch Paper Co. 28.00c

Chemical Wood Bond, White and Colored

No. 102—200,000 lbs., white, No. 40; flat, cut any size, min. width 21 ins.; max. width 38 ins.

D. L. Ward 9.506c
Aetna Paper Co. 9.26c

No. 103—50,000 lbs., blue, No. 32; flat, cut 32x42 ins.

D. L. Ward Paper Co. 10.185c
Aetna Paper Co. 10.67c

25% Bond, White and Colored

No. 105—100,000 lbs., white, No. 26; flat, cut any size, min. width 21 ins.; max. width 48 ins.

Aetna Paper Co. 16.97c
Barton, Duer & Koch Paper Co.
100,000 lbs. only 18.15c

No. 106—300,000 lbs., white, No. 32; flat, cut any size min. width 21 ins., max. width 48 ins.

R. P. Andrews Paper Co. .....
50,000 lbs. only 14.74c

Cauthorne Paper Co. .....
50,000 lbs. only 14.74c

Wilcox, Walker, Furlong Paper Co
50,000 lbs. only 14.74c

Aetna Paper Co. 13.75c

Central Ohio Paper Co. .....
50,000 lbs. only 14.74c

No. 110—60,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, No. 26; flat, cut 34x44 ins., min. order, 5,000 lbs.

Aetna Paper Co. 17.77c

No. 111—150,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, No. 32; flat, cut any size, min. width 21 ins., max. width 48 ins.

Aetna Paper Co. 14.35c

Chemical Wood White Ledger

No. 150—50,000 lbs., No. 48, flat, cut any size, min. width 17 ins., max. width 48 ins.

D. L. Ward Paper Co. 10.476c

No. 151—200,000 lbs., No. 64, flat, cut any size, min. width 17 ins., max. width 48 ins.

D. L. Ward Paper Co. .....
100,000 lbs. only 10.476c

No. 153—1,000,000 lbs., No. 88, flat, cut any size, min. width 17 ins., max. width 48 ins.

Wilcox, Walker Furlong Paper Co
120,000 lbs. only 10.23c

25% Ledger, White and Colored

No. 156—150,000 lbs., white, No. 88, flat, cut 22x34, 24x38,28x34, 32x42, 34x44 and 38x48 ins. Min. order 5,000 lbs.

Aetna Paper Co. 14.15c

No. 157—50,000 lbs., blue, buff, cherry, green, pink, salmon, and yellow, No. 64, flat, cut 24x38, 28x34 and 34x44 ins. Min. order, one substance, one color, 5,000 lbs.

Aetna Paper Co. 14.45c

No. 158—400,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, No. 88, flat, cut 24x38, 28x34, 34x44 and 38x48 ins. Min. order, one substance, one color, 5,000 lbs.

Aetna Paper Co. 14.75c

100% White Ledger

No. 176—50,000 lbs., No. 48; flat, cut 24x38, 28x34, 32x42, 34x44 and 38x48 ins. Min. order, 4,000 lbs.

Barton, Duer & Koch Paper Co. 28.00c

No. 177—100,000 lbs., No. 64; flat, cut 24x38, 28x34, 32x42, 34x44 and 38x48 ins. Min. order, 5,000 lbs.

Barton, Duer & Koch Paper Co. 28.00c

Chemical Wood White and Colored Index

No. 183—300,000 lbs., white, 25½x30½—220 and 280; flat, cut 34x44 ins., with projecting colored-paper marker between each 100 sheet. Min. order, one weight, 10,000 lbs.

Whitaker Paper Co. .....
100,000 lbs. only 8.14c

50% Index, White and Colored

No. 191—100,000 lbs., blue, buff, cherry, fawn, green, pink, salmon and yellow, 25½x30½—220 and 280; flat, cut 24x38, 28x34, 34x44 and 38x48 ins., with projecting colored-paper marker between each 100 sheets. Min. order, one color, one weight. 5,000 lbs.

R. P. Andrews Paper Co. .....
50,000 lbs. only 16.47c

Aetna Paper Co. 15.97c

Barton, Duer & Koch Paper Co. 16.14c

Coated Cover, White and Colored

No. 201—50,000 lbs., white, 20x26—130; flat, cut 26½x41, 32x42 and 34x44 ins., the grain to run lengthwise of the sheet. Min. order, 5,000 lbs.

Antique-Finish Cover, White and Colored

No. 203—50,000 lbs., 20x26—100; antique; white, blue, buff, dawn, quaker drab, terra cotta, gray, brown, green, gobelin blue, granite, tea and yellow; flat, cut 25¼x39, with projecting colored-paper marker between each 500 sheets. Min. order, one color, 5,000 lbs.

R. P. Andrews Co. 9.03c
Whitaker Paper Co. 9.00c

50% Laid Cover, Colored

No. 206—30,000 lbs., blue, cream white, gray and green, 20x26—130 and 200; flat, cut 25¼x39 and 28x41 ins., with projecting colored-paper marker between each 500 sheets. Min. order, one color, 2,000 lbs.

R. P. Andrews Paper Co. 14.88c

Wood Manila

No. 208—200,000 lbs., 24x36—80 and 100; flat, cut 25x38, 32x42 and 40x52½ ins., with projecting colored-paper marker between each 500 sheets.

No. 209—50,000 lbs., 24x36—80 and 100; rolls, 21 ins. wide (3-inch fiber cores).

No. 2 Kraft

No. 217—50,000 lbs., 24x36—80 to 160; flat, cut any size, in wrapped bundles.

No. 218—50,000 lbs., 24x36—80 to 160; cut any size, folded (25 sheets per fold), in wrapped bundles.

No. 219—100,000 lbs., 24x36—80 to 160; rolls, min. width 9 ins., max. width 48 ins., wound on wooden plugs, 1½-inch hole, or on 3-inch fiber cores as may be specified.

High-Finish Chemical Wood Manila Tag

No. 271—50,000 lbs., 24x36—280; flat, cut any size, min. width 24 ins., max. width 38 ins.

Paper Corp. of U. S. 9.50c

Wood Cardboard, Colored

No. 308—40,000 lbs., melon, 22½x28½—184; flat, 20x30 ins., in wrapped bundles with projecting colored-paper marker between each 100 sheets.

No. 309—50,000 lbs., blue, buff, gray, green, melon, pink and yellow; 22½x28½—184; rolls, 20 inches wide (6-inch iron cores).

United States Postal Card Paper

No. 325—1,000,000 lbs., 22½x28½—188; rolls, 22 ins. wide, 30 ins. in diameter and 33 ins. wide, 36 ins. in diameter (6-inch iron cores).

R. P. Andrews Paper Co. ...
1,500,000 lbs.
Lots 325, 326 and 327 6.17c

Whitaker Paper Co. .....
1,500,000 lbs.
Lots 325, 326 and 327 6.22c

No. 326—1,000,000 lbs., 22½x28½—188; rolls, 22 ins. wide, 30 ins. in diameter and 33 ins. wide, 36 ins. in diameter (6-inch iron cores).

R. P. Andrews Paper Co. .....
1,500,000 lbs.
Lots 325, 326 and 327 6.17c

Whitaker Paper Co. .....
1,500,000 lbs.
Lots 325, 326 and 327 6.22c

No. 327—1,000,000 lbs., 22½x28½—188; rolls, 22 ins. wide, 30 ins. in diameter, 33 ins. wide and 36 ins. in diameter (6-inch iron cores).

R. P. Andrews Paper Co. .....
1,500,000 lbs.
Lots 325, 326 and 327 6.17c

Whitaker Paper Co. .....
1,500,000 lbs.
Lots 325, 326 and 327 6.22c

News Board

No. 360—100,000 lbs., 26x38—100, flat, cut any size, min. 21x32 ins., max. 40x52½ ins. (to be trimmed square on four sides).

Binder's Board, No. 1 Quality

No. 366—40,000 lbs.; flat, to trim 25x30 ins., No. 16, 18, 20, 25, 30 and 40.

R. P. Andrews Paper Co. 4.5425c
Mathers-Lamm Paper Co. 5.004c

Binder's Board, Best Quality

No. 368—10,000 lbs.; flat, to trim 20x30 ins. and 22x28 ins., Nos. 18, 20, 25, 30, 35, 40, and 45. Min. order, 5,000 lbs.

Consolidated Paper Co. 6.73c

Chestnut Cover Board

No. 369—150,000 lbs.; flat, to trim 25x30 ins., Nos. 17, 19, 21, 25, 31 and 41.

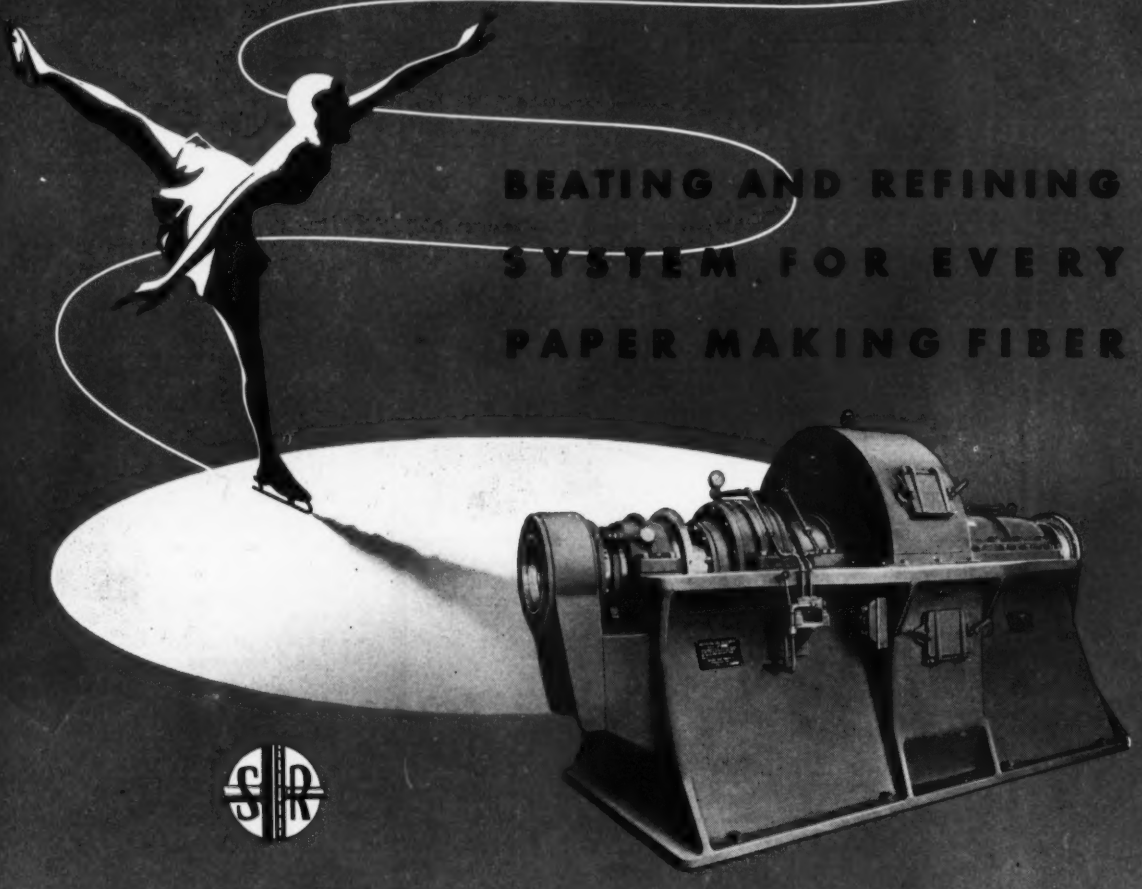
Mead Sales Co. 4.40c

No. 370—80,000 lbs., flat, to trim 25¾x37¾ ins., Nos. 16, 19, 24 and 31.

Old Dominion Paper Co. 4.775c

SUTHERLAND

continuous



BEATING AND REFINING
SYSTEM FOR EVERY
PAPER MAKING FIBER

SUTHERLAND REFINER CORPORATION

TRENTON, NEW JERSEY • *Manufactured in the United States by Valley Iron Works Co., Appleton, Wis.*

SUTHERLAND REFINER LIMITED, 319 DRUMMOND BLDG., MONTREAL, P.Q., *Manufactured in Canada By The John Bertram & Sons Co. Ltd., Dundas, Ontario*

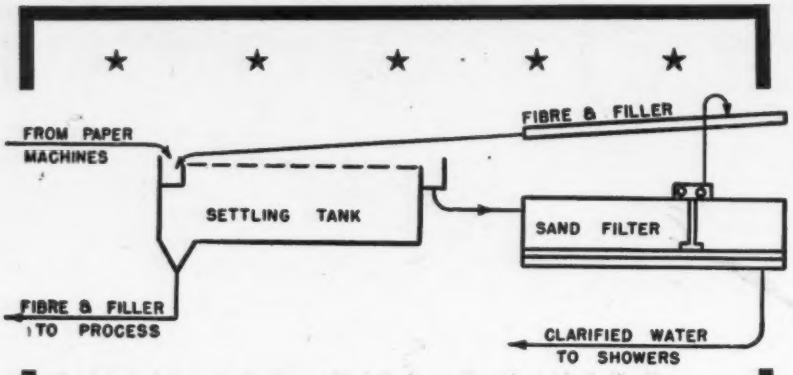
Marathon Promotes Holt

MENOMINEE, Mich., March 18, 1946 — The appointment of George W. Holt, Jr., as resident manager of the Menominee plant of Marathon Corporation has been announced by R. J. Sund, production manager. The Menominee division of the corporation is devoted to the manufacture of heavyweight papers for food packaging and production of Waxtex, a household waxed paper roll.

Mr. Holt has been associated with Marathon since 1936. He represented the Jobber Sales Division in the corporation's San Francisco office, until 1942 when he enlisted in the Army Air Corps. He was engaged in training air force personnel and was discharged in 1945 with the rank of major. Following his release from the Army he was placed in charge of sales of Waxtex and other resale products for the Jobber Division.

Chadbourne Heads Chamber

WESTFIELD, Mass., March 16, 1946 — Joseph A. Chadbourne, president of the Old Colony Envelope Company, was reelected president of the Westfield Chamber of Commerce, at its annual meeting.



FLOW ARRANGEMENT in a paper mill installation using the Hardinge Company's new, modern effluent filter.

Type of Mill	Filter Size	Filter Rate gals./ sq. ft./ min.	Flow gals./ 24 hrs.	Settling Tank Feed PPM	Settling Tank Feed lbs./ 1000 gals.	Filter Influent PPM	Filter Influent lbs./ 1000 gals.	Filter Effluent PPM	Filter Effluent lbs./ 1000 gals.
Paper Board	10'x52'	2.5	1,900,000	600	5.0	412	3.4	35	0.3
Paper Board	13'x35'	1.7	1,100,000	730	6.1	300	2.5	33	0.29
Magazine	12'6"x40'	1.1	800,000	...	..	180	1.44	15	0.12

FILTER OPERATING DATA Filter effluent is used for paper machine showers in all installations above.

every paper mill should get the complete story on the Hardinge A.B.W.* Sand Filter

*Automatic Backwash

WRITE OUR NEAREST OFFICE

HARDINGE COMPANY, INCORPORATED • YORK, PENN.
NEW YORK 17—122 E. 42nd St. • 205 W. Wacker Drive—CHICAGO 6
SAN FRANCISCO 5—501 Howard St. • 200 Bay St.—TORONTO 1

Oxford Earnings Up

RUMFORD, Me., March 11, 1946—Net earnings of $974,060 in 1945 were reported last week by the Oxford Paper Company and wholly owned subsidiaries. This compares with the $899,195 figure for 1944.

At the same time president Hugh J. Chisolm said a three-year expansion and diversification program was at hand and that orders for machinery and materials had already been placed.

Seventy-five percent of war service employes have returned to their former jobs, Chisholm said, while 300 veterans, without previous company connections, have been hired.

The president's statement also announced the elevation of Rex W. Hovey to vice-president and the retirement of Charles A. Gordon who will, however, continue as a director.

McQuillan Heads Nonotuck

HOLYOKE, Mass., March 10, 1946 —Edward T. McQuillan has been named superintendent of the Nonotuck Division of the American Writing Paper Corporation. He has been with the company for many years, according to E. C. Reid, vice-president. He succeeds Francis M. Gillespie.

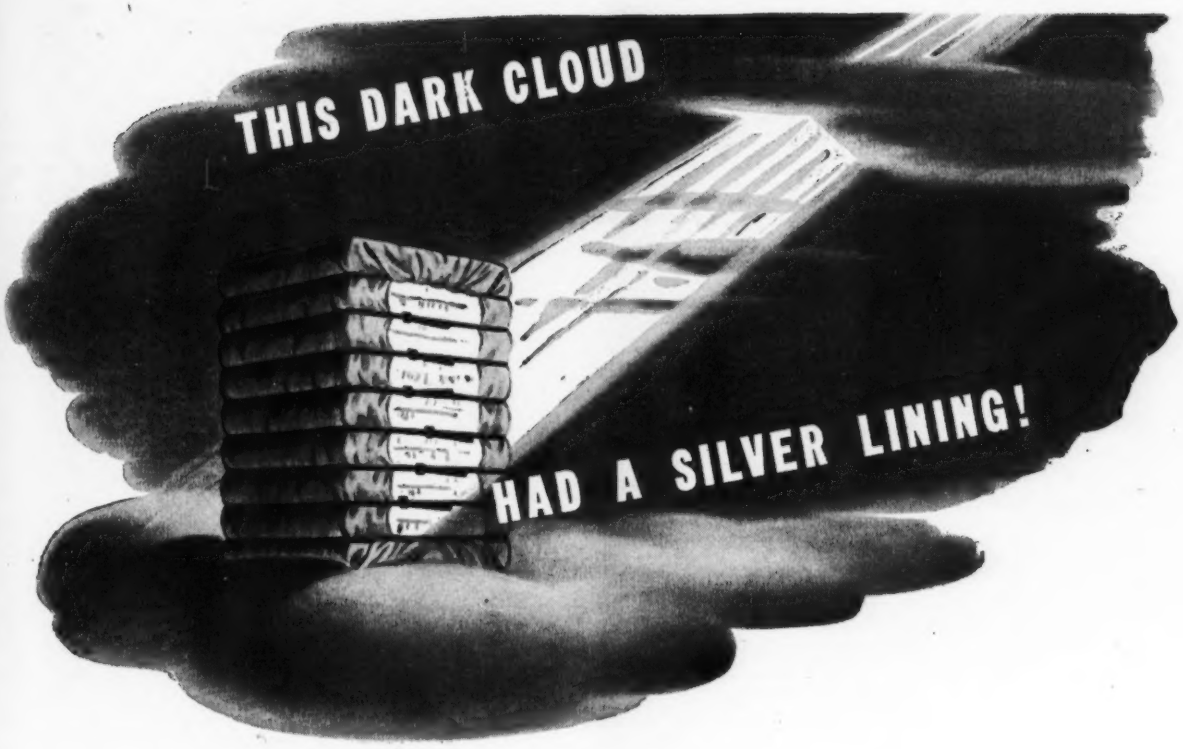
McQuillan started in as a worker at American Writing and has advanced through various jobs to his present position. Up until now, he was assistant superintendent at the Crocker division, and before that was night superintendent at the same division.

Cain Talks Service

PHILADELPHIA, Pa., March 16, 1946 — R. L. Cain, assistant manager of sales for Pennsylvania Salt Manufacturing Company, was guest speaker at a dinner meeting of the Sales Managers Association of Delaware County, on Wednesday, March 13, at Springhaven Club, Chester. His address was on "Servicing Salesmen" and was listened to with great enthusiasm by upwards of one hundred and fifty members and their guests.

Erving Petition Denied AFL

ERVING, Mass., March 10, 1946—The National Labor Relations Board has dismissed a petition by the International Brotherhood of Papermakers (AFL) to be certified as collective bargaining agent for employes of the Erving Paper Mills. The board reported that the workers voted against the union 115 to 37 in a Feb. 13 election.



To the dark cloud of wartime necessity, the establishment of the successful use of RAYCO Linter Cotton as a base for making fine, cotton content paper, proved to be a silver lining. Paper manufacturers welcomed this new source of supply and found it speeded production by eliminating rag room operations and reducing cooking time.

The war emergency is passing but the synthetic fiber age is growing and the need for a source of supply of virgin fibers for fine cotton content paper will continue. The technical knowledge gained by Railway Supply engineers in adapting RAYCO to individual mill processes, enables us to offer expert service backed by practical, in-the-mill experience.

Our engineering staff will be glad to show you how clean, carefully graded and inspected RAYCO Linter Cotton can easily be adapted to your particular setup and equipment to produce a finished cotton content paper of uniform high quality.

The RAILWAY SUPPLY & MFG. CO., and Affiliates

Specialists in Grading, Marketing and Processing Cotton Fibers

General Offices: Cincinnati, Ohio

Plants:	Cincinnati, Ohio	Charlotte, N. C.	*Sales Offices:*	New York, N. Y.
	Franklin, Ohio	Covington, Tenn.		Chicago, Ill.
	Atlanta, Ga.	Greensboro, N. C.		Detroit, Mich.

RAYCO LINTER COTTON

Pacific Mills Modernizes Big Plant

OCEAN FALLS, B. C., March 11, 1946—Besides the extensive program recently announced for townsite improvements, Pacific Mills Limited are also spending a half million dollars at the present time in modernizing several parts of the pulp and paper plant at Ocean Falls. These improvements consist of the installation of a Zinc Hydrosulphite bleaching system for groundwood pulp, a Bauer Refiner for the reclamation of groundwood fine screen rejects, a Continuous Causticizing system in the Kraft Recovery Plant and an expansion in sulphite pulp capacity that will increase production approximately 50%.

The groundwood zinc hydrosulphite bleaching system will supplant present bleaching methods which are unsatisfactory and do not give a sufficiently high brightness to the finished newsprint sheet. The new installation will result in obtaining a brightness in excess of the customer requirements. It is very modern in all respects.

Two 8′ x 16′ double port Oliver washers will handle 260 tons of groundwood pulp per day. All parts coming in contact with stock are rubber covered or made of stainless steel. The bull screens are being reconstructed of stainless steel and all pumps handling unwashed stock are made from acid resisting bronze. Similarly all pipe lines are of wood stave pipe with rubber lined valves and fittings. An arrangement of chests has been devised to give a longer reaction time than usual and also for the minimizing of stock channelling without having to resort to positive agitation. Dispersion of the zinc hydrosulphite solution in the stock is accomplished by its addition at the suction side of a pump and the amount added is positively determined through the use of proportioning pumps.

The piping is arranged so as to permit the use of paper mill white water, clear or cloudy effluents as temperature conditions dictate.

Use is being made of many controls so that the system can operate as automatically as possible. A central control panel will also permit operation with the minimum amount of work for the operators.

A latest type Bauer Refiner is also being installed for recovery of groundwood fine screen rejects. The discs are driven by 2—150 h.p. 1,200 r.p.m. motors and the stock is thickened to about 8% consistency by means of a Drainer-Conveyor just before the refiner. In order to ensure a uniform feed a wood stave tank is provided to smooth out any irregularities in flow and a pump delivers the rejects from the tank to a constant overflow box. Wood stave pipe, lithcoted fittings and valves and bronze pumps are being used throughout.

The existing batch causticizing installation in the kraft recovery plant will be replaced with a modern Dorr Continuous system. All of this plant will be housed in existing buildings. The chief equipment consists of a slaker-classifier, three causticizing tanks with turbo-mixer agitators, white mud washer, green and white liquor clarifiers. The green liquor is heated indirectly through a stainless steel heater and the lime feed to the slaker is controlled and weighed automatically by means of a Merrick Feed-O-Weight. Controls and instrumentation are of Foxboro manufacture.

This plant will have a capacity of 175 tons of pulp per day. Lime reburning is not going to be carried out at the present time due to the use of a high proportion of the sludge in the sulphite acid plant Barker Tower.

The sulphite pulp plant is being modernized and production capacity increased.

In the acid plant a Leeds and Northrup Continuous SO_2 Recorder is being installed as well as an acid filter for removing sludge, and stainless steel acid pumps.

The work around the Digester House comprises the installation of a large acid recovery tank, and rehabilitation of the digester heating and circulating system.

In the screen room two Jonsson Knotters are being installed, more fine screen capacity being added and two modern wood vat Sherbrooke deckers.

Package Machinery Re-elects

SPRINGFIELD, Mass., February 16—All officers of the Package Machinery Company were reelected at the 34th annual meeting of the stockholders which was followed by a meeting of the board of directors. Those renamed were: Chairman of the board, Roger L. Putnam; president, George A. Mohlman; vice-president and treasurer, Roe S. Clark; vice-president in charge of engineering, E. Lovell Smith; vice-president in charge of sales, Tom Miller; vice-president in charge of production, George C. Ferver; executive committee, Mohlman, Clark and Smith.

Directors reelected were: Stoughton Bell of Boston, George Putnam of Boston, Floyd Jefferson of New York City, M. B. Ferguson of New York City; John M. Collins, Putnam, Mohlman, Clark and Smith all of this city.

A dividend of 75 cents per share, payable March 1, was voted to all stockholders of record on February 20.

E. de Vries Company

EDVECO

PAPER EXPORTERS

ALL OVER THE WORLD

EDVECO

220 E. 42nd Street

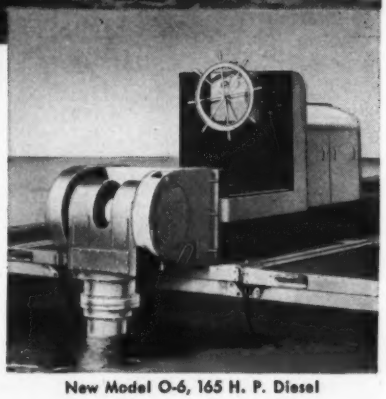
New York 17, N. Y.

HERE'S *Power Plus* PERFORMANCE!

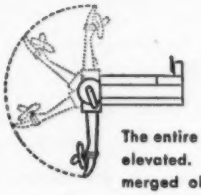
MURRAY & TREGURTHA'S 165 H. P. DIESEL MODEL O-6 HARBORMASTER

Heavy duty **Power Plus Performance** pays off . . . that's exactly what you receive in all models of the Harbormaster, ranging from 20 H. P. to 330 H. P., gasoline or diesel powered. Rated at continuous heavy duty performance, it's a fact that the Harbormaster delivers more thrust per horsepower than any other conventional propelling and steering equipment . . . **the pay thrust delivering extra performance!**

Thoroughly tested and proved in inland waterways and coastal operations we're proud to invite your prompt inquiry on the **new** rugged Model O-6, 165 H. P. diesel (continuous heavy-duty rating) . . . unequalled for pay-load thrust per horsepower, maintenance efficiency, maneuverability, and ease of operation. Send today for the new descriptive details of this compact, foolproof unit . . . and ask for literature on all Harbormaster models. You'll find the "Harbormaster" delivers **extra power plus performance** in all phases of marine operations, and is applicable to fishing craft, workboats, tug and tow-boats, lighters and many other types of vessels.



New Model O-6, 165 H. P. Diesel



The entire tail assembly may be elevated. Damage from submerged obstacles is prevented by a shear pin which shears off, automatically allowing the outboard drive to move back and upward . . . out of danger.

MURRAY & TREGURTHA, INC.

High Fidelity Marine Engines since 1885

50 HANCOCK STREET, QUINCY 71, MASS., U. S. A.

MATHEWSON MACHINE WORKS — Manufacturing Affiliate

SHERBROOKE MACHINERIES, LTD., SHERBROOKE, QUEBEC — Licensed Mfg. and Distributor for Canada

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending March 16, 1946

STOCKS

	High	Low	Last
A. P. W.	8⅜	7¾	8⅜
Armstrong Cork Co.	55½	54	54¾
Celotex Corp.	25⅞	23¾	25⅜
Celotex Corp., pf.	21¼	20⅝	21¼
Certain-Teed Products Corp.	17⅜	16½	17⅝
Certain-Teed Products Corp., pf.	110⅞	110⅛	110⅞
Champion Paper & Fibre Co.	49	46	46
Champion Paper & Fibre Co., pf.	112	111¾	111¾
Congoleum Nairn Co.	33¾	32¾	33
Container Corp. of America	44¾	42¾	44¾
Continental-Diamond Fibre Co.	15⅝	14⅝	15½
Crown-Zellerbach Co.	32⅛	30¾	32
Crown-Zellerbach Co., pf.	108	107⅞	108
Dixie Cup Co.	43½	41	43
Dixie Cup Co.—A	53½	52¾	53½
Flintkote Co.	36⅞	35⅜	36¾
Flintkote Co., pf.	114¼	113¾	114¼
Robert Gair	9⅛	8⅝	9⅛
Robert Gair, pf.	20½	20⅛	20¼
International Paper Co.	42⅝	41⅛	42⅜
International Paper Co., pf.	113¼	110¾	111
Johns-Manville Corp.	146	141½	146
Johns-Manville Corp., pf.	136	134⅛	136
Kimberly-Clark Corp.	60½	58½	60
Mac Andrews & Forbes	...	...	...
Mac Andrews & Forbes, pf.	...	...	...
Masonite Corp.	57½	56⅛	57⅛
Mead Corp.	25	23⅜	24⅞
Mead Corp., pf. A—6%	106	103½	106
Mead Corp., pf. B—5½%	106½	106	106½
National Container Corp.	27½	24¾	27½
Paraffine Companies, Inc.	77¾	76	77¼
Paraffine Companies, Inc., pf.	...	...	...
Rayonier, Inc.	24	23⅛	23⅜
Rayonier, Inc., pf.	38½	38⅛	38½
Ruberoid Co.	47	43¾	46
Scott Paper Co.	57¾	55½	57
Scott Paper Co., pf.	108	108	108
Sutherland Paper Co.	44½	43¼	43¼
Union Bag & Paper Corp.	26¾	24½	26½
United Paperboard Co.	10⅛	9¾	9⅞
U. S. Gypsum Co.	121	116	121
U. S. Gypsum Co., pf.	204¼	204	204
West Virginia Pulp & Paper Co.	38¾	36½	38½
West Virginia Pulp & Paper Co., pf.	114½	114	114

BONDS

Abitibi Pulp & Paper Co. 5s '53	108⅞	108⅞	108⅞
Celotex Corp. 3¾s '55	...	...	...
Certain-Teed Products Corp. 5½s '53	...	...	...
Champion Paper & Fibre Co. 3s '65	...	...	...
International Paper Co. 5s '47	...	...	...
Mead Corp. 3½s '53	...	...	...

New York Curb Exchange

High, Low and Last for Week Ending March 16, 1946

STOCKS

	High	Low	Last
Great Northern Paper Co.	39	39	39
Hummel-Ross Fibre Corp.	11¼	10	11¼
St. Regis Paper Co.	10¾	9⅝	10
St. Regis Paper Co., pf.	...	...	...
Taggart Corp.	8½	8¼	8¼

BONDS

American Writing Paper Co. 6s '61	...	...	...

Gair Nets 55 Cents

The Robert Gair Company, Inc., and domestic and Canadian subsidiaries report for 1945 a consolidated net profit of $993,872 after eliminating non-recurring charges net of taxes of $182,492, and without including special credits of $325,277. After preferred dividends on parent company's preferred stock, balance of $682,334 equaled 55 cents each on 1,231,447 common shares.

Celotex Earnings Up

The Celotex Corporation and wholly owned subsidiary, for the quarter to January 31, reports a net profit of $366,684 or 40 cents a common share, compared with $137,311 or 13 cents a share a year before.

Hawley Pulp Profits Rise

The Hawley Pulp and Paper Company, for 1945, reports a net income of $134,134, or 43 cents a common share, against $141,871, or 29 cents a share, in 1944.

AWP Profits Lag Slows Plant Plans

HOLYOKE, Mass., March 16, 1946 — American Writing Paper Corporation profits dropped last year and until the squeeze caused by OPA ceiling prices is eased the program for plant renovation will be slowed up. That was the message Thomas Harper Blodgett, president and chairman of the board, gave to the stockholders in his annual report.

"Ours is a narrow margin, sharply competitive industry. The maintenance of wartime ceiling prices together with the wage and salary increases materially darken the prospects for immediate profits and further needed improvements. Until the relation between costs and ceiling prices is improved and until the necessary rehabilitation program is completed your management can not forecast a date for paying wages on capital in the form of dividends," Blodgett said.

The AWP earned $150,610.86 last year as compared to profits of $184,312.18 in 1944. However, in the fourth quarter last year, the local firm lost money. Including a $24,300 retroactive wage increase, the loss for the last three months was $44,195.43. This loss resulted in a reduction of income tax estimates for the entire year of $86,788.90, and enabled the company to add $42,593.47 to surplus. In the fourth quarter of 1944 profits of $60,812.92 were made.

West Virginia Earns 41 Cents

The West Virginia Pulp and Paper Company and subsidiaries for the December quarter reports net profit, after $870,000 taxes, was $1,047,071, or 98 cents a common share, against $538,738, or 41 cents a share, after $700,000 tax charges for similar three months of 1944. Report states that in addition, there was a non-operating and non-recurring credit to surplus of $237,913 from sale of mature timber from company's lands during the three months ended on January 31, 1946.

Puget Sound Votes Dividend

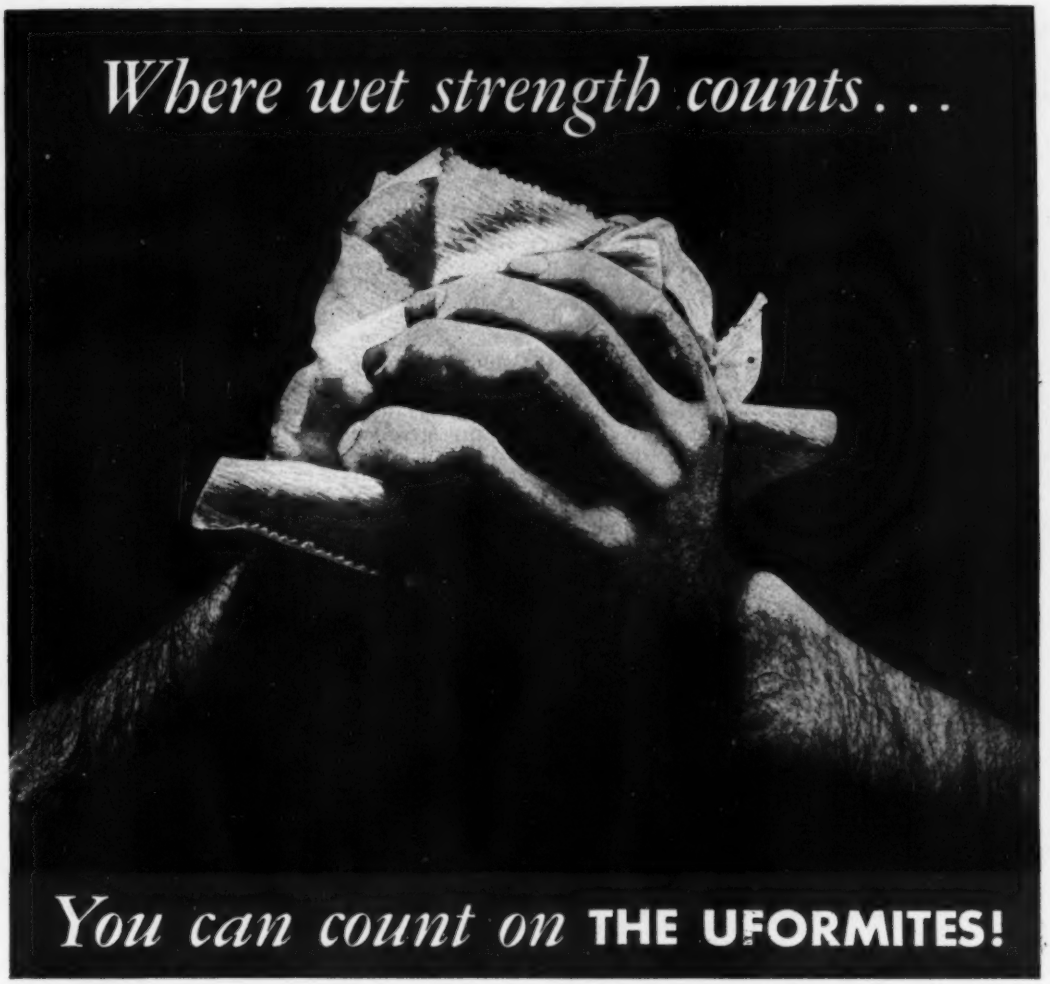
At a meeting held on March 12 the directors of Puget Sound Pulp and Timber Company declared the regular quarterly dividend of 30 cents a share on the preferred stock, payable April 1 to stockholders of record March 15, 1946, and a dividend of 25 cents a share on the common stock, payable March 29 to stockholders of record March 22, 1946. In 1945 dividends totaling $1 a share were paid on the common stock.

Nashua Profits Off

The Nashua Gummed and Coated Paper Company, for 1945, reports a consolidated net profit of $478,611, equal to $10.39 each on 46,058 common shares, against $641,907, or $13.93 a share in 1944, which included an extraordinary credit of $135,677, or $2.94 a share, representing net insurance collected on death of W. L. Cartner, former president of company.

Glatfelter Profits Up in 1945

PHILADELPHIA, Pa., March 18, 1946—P. H. Glatfelter Co., Spring Grove, manufacturers of fine grade book, bond, writing and envelope papers, reports a net income of $182,423.03 for the year 1945 after all charges and taxes, as compared with $174,711.79 for the year 1944.



Paper toweling is just one of many applications for which Uformite 467 and Uformite 470 are especially valuable. For these urea formaldehyde resins increase wet strength easily and economically.

Uformite 467 is particularly designed for use with Kraft by beater addition. Uformite 470 is recommended especially for sulfite stocks but can be used effectively with Kraft, rag and groundwood—in stocks where low acidity is important.

Neither Uformite 467 nor 470 require any major change in your regular operating procedure. No pretreatment or special handling is required. As little as 1% resin solids on dry fibre weight will increase wet strength as much as 30%!

In addition to high wet strength properties, Uformite 467 and Uformite 470 improve dry tensile and Mullen, fold, uniformity of sizing, and coating surface characteristics.

See for yourself how these wet strength resins can increase the value of your paper production at low cost.

UFORMITE *is a trade-mark, Reg. U. S. Pat. Off.*

THE RESINOUS PRODUCTS & CHEMICAL COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Smith to Redeem Stock

MONTREAL, Que., March 18, 1946 —Howard Smith Paper Mills Limited, of Montreal, have issued a call for redemption of their outstanding 6% cumulative preferred stock on May 8, 1946, at a redemption price of $110 and accrued dividends. The amount of the issue outstanding is 71,703 shares of $100 par each, so that the redemption will require $7,887,330, exclusive of accrued dividends. The redemption will be carried out through an issue of 160,000 shares of $50 par stock, carrying a fixed cumulative dividend of $2 per share, equivalent to a 4% basis. The new stock, it is said, will be redeemable at $52.50 a share.

A substantial saving in dividend requirements is indicated for the company through the refunding step. On the old 6% preferred stock the dividend requirements amounted to $430,218 a year. On the $8,000,000 of new preferred the dividend requirements will be $320,000 a year. Thus there is an indicated decrease in annual dividend requirements of slightly over $110,000 a year.

The company has 332,836 common shares outstanding. The indicated saving of $110,000 in annual preferred dividend requirements works out to 33 cents per share of common stock.

A little over a year ago the company inaugurated dividends on the common stock, placing it on an annual basis of $1 by declaring a quarterly dividend of 25 cents per share. Similar quarterly payments have been made since then.

The company's fiscal year ends December 31, and annual report for 1945 is expected to be issued later this month. Last year the company reported for 1944 net earnings equal to $1.88 per share on the common and a strong financial position, with net working capital of nearly $8,000,000 and a current ratio of approximately five to one.

Emmett Buckley Promoted

The Western Newspaper Union, general paper merchants, with 46 branches in key cities, announces the appointment of Emmett Buckley as general sales manager.

Mr. Buckley has been manager of the concern's Des Moines, Ia., branch for 20 years. For the past five months he has been in New Orleans, La., assisting in the reorganization of the E. E. Palmer Company, general paper merchants, which the Western Newspaper Union purchased last October.

COPCO Moves in Pittsburgh

The Central Ohio Paper Company's Pittsburgh Division will move April first to its own building with 25,000 ft. of floor space at 1339 Locust St., on the corner of Stevenson, according to Wm. D. Lamb, vice-president and general manager of this division. At the same time a stationery department will be added under the direction of Robert J. Brown who has been assistant manager of the stationery department at their Columbus Division. This addition will round out the service performed in supplying large lines of both fine and coarse papers to the territory centering in Pittsburgh.

On moving into its own building at Pittsburgh, The Central Ohio Paper Company will complete its eight warehouse divisions, including buildings in Detroit, Indianapolis, and Charleston as well as the Ohio cities of Cleveland, Dayton, Toledo and Columbus. Salesmen from the Pittsburgh Division travel a radius of 75 miles from their city to meet the territory covered by salesmen from the Charleston, Columbus and Cleveland houses.

Copco Papers were first introduced to the Pittsburgh trade in 1877 when O. A. Miller, personally traveled the Ohio River territory. Today, Mr. Miller, still active as chairman of the Board of The Central Ohio Paper Company, is greatly interested in the growth of the Pittsburgh Division from the very small beginning in 1877 to its own quarters from where a wider and better service can be rendered to this territory.

Red Rock in Production

MONTREAL, Que., March 18, 1946 —The Brompton Pulp and Paper Company, of Montreal, has announced that its Red Rock mill, which came into operation this year, is expected to reach rated capacity by the end of this month, and will eventually be capable of producing 75,000 tons of pulp and board products a year. Some delay in bringing the new mill into full operation was experienced in January by the explosion of a large steam turbine, which necessitated a shutdown for two weeks. During this time repairs were made to assure continuity of production until such time as a new steam turbine can be installed.

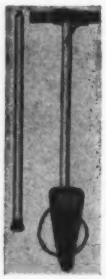
Construction of the townsite is progressing favorably and approximately 100 houses are inhabited at the present time. The erection of additional houses, stores, school and church will begin this spring and will be completed by September or October.

Woods operations are progressing satisfactorily, and a sufficient quantity of pulpwood has been cut to assure continued operation of the Red Rock and Nipigon mills to the end of May, 1947. Hauling thus far is up to schedule and no difficulties in this respect are anticipated.

White & Wyckoff Raise

HOLYOKE, Mass., March 16, 1946 —The White & Wyckoff Manufacturing Co. has announced an increase of five per cent in the wages of factory workers and office staff. The entire force of the company, totaling about 400, will benefit by the increase, which becomes effective tomorrow.

BELIEVE IN SIGNS?



When spots, curl, cockle and blisters occur, it is a pretty sure sign of improper surface temperatures in the train of drying rolls. But why guess and spoil good paper? You can accurately, quickly and conveniently check the surface temperatures of still and moving rolls with the Cambridge Surface Pyrometer.

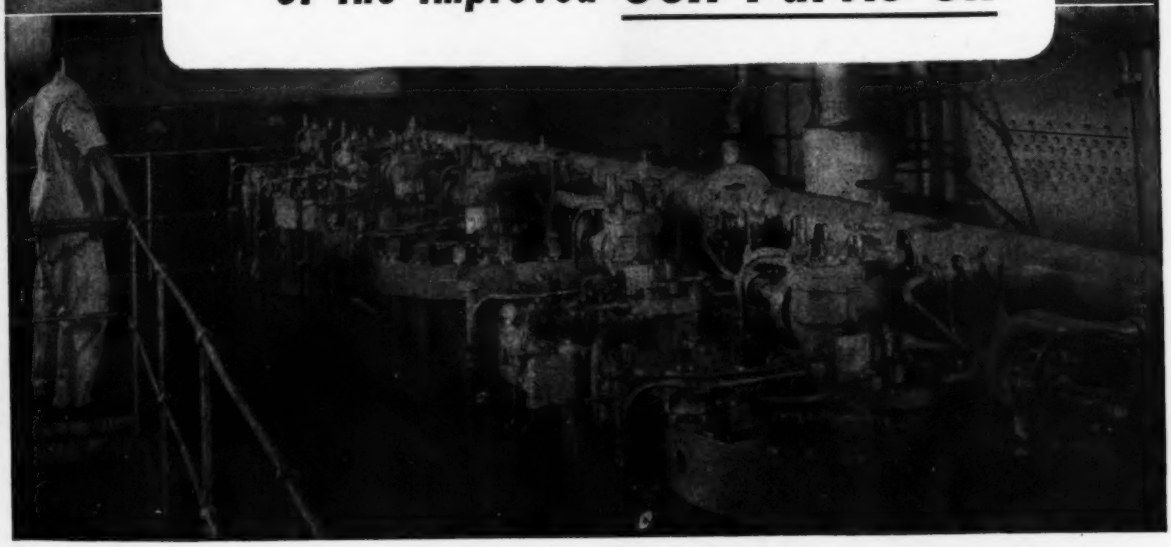
The CAMBRIDGE is made in a hand model and with an extension to reach those hard-to-get-at places.

CAMBRIDGE INSTRUMENT CO., INC.
3702 Grand Central Terminal Bldg.
New York 17, N. Y.

CAMBRIDGE
SURFACE PYROMETERS

Non-foaming-

another important advantage of the improved Gulf Parvis Oil



The two 5,000 h.p. Diesels on this motorship have given uninterrupted service with negligible maintenance costs over a period of many years —thanks largely to efficient lubrication with Gulf Parvis Oil.

THE RECENT DISCOVERY by Gulf Technologists of an effective anti-foam agent is another significant development in the history of petroleum science. This remarkable agent successfully prevents foaming difficulties in lubricants regardless of operating conditions, yet in no way diminishes their lubricating qualities!

You can benefit by Gulf's discovery, for the improved Gulf Parvis Oil contains this new anti-foam agent.

This is just one of the important features of the improved Gulf Parvis Oil. You also get more effective protection of your Diesels through its higher lubricating value, and longer lasting protection because of its greater resistance to oxidation. Call in a Gulf Service Engineer today and ask him to recommend the proper grade of Gulf Parvis Oil to fit your particular requirements.

GULF INDUSTRIAL LUBRICATION

Gulf Oil Corporation • Gulf Refining Company

Division Sales Offices:

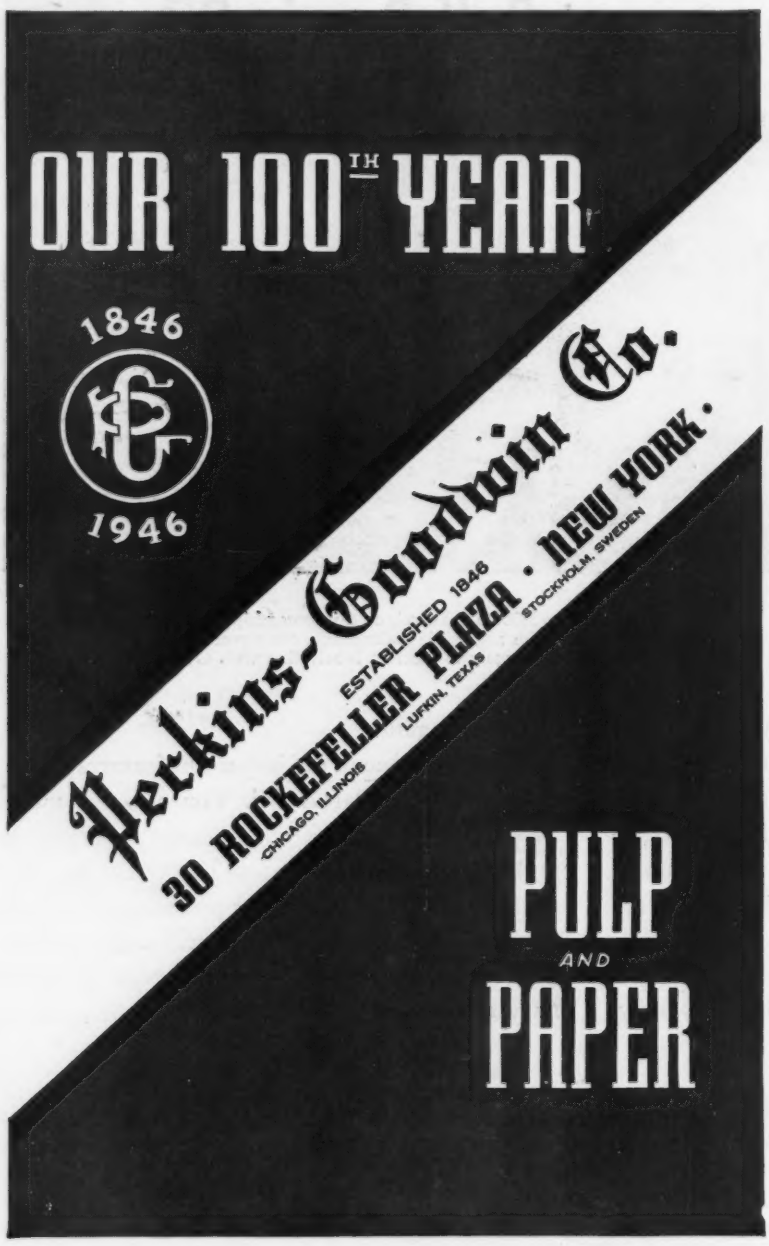
Boston • New York • Philadelphia • Pittsburgh • Atlanta
New Orleans • Houston • Louisville • Toledo

Container Buys Coast Firm

CHICAGO, Ill., March 16, 1946 — Container Corporation of America has arranged to acquire control of California Container Corporation through exchange of stock. The latter company, organized in 1933, has corrugated the fiber box factories in Los Angeles and San Francisco, Cal., and in Seattle, Wash., and has enjoyed a profitable business record over the years with an excellent reputation for quality and service. N. C. Flint, who for many years had been a member of the Container Corporation organization, is now president of California Container Corporation and will continue in that capacity. W. M. Dixon, vice-president of Container Corporation, will supervise the California operations from Chicago.

Kieckhefer-Eddy Plans

WESTBROOK, Me., March 14, 1946 —An 86,000 square foot paper box factory, a branch of the Kieckhefer Container Company and the Eddy Paper Company of Milwaukee, Wisconsin, was planned for construction at Westbrook, Maine, it was revealed this week. Operating 26 plants in the United States, the manufacturers of heavy carton boxes expect to employ 200 persons at the new factory.



Keys Fibre Pay Scale Rises

WESTVILLE, Me., March 9, 1946 —An eight cents an hour increase for employes of the Keyes Fibre Company has been announced by officials of Local No. 449, Pulp, Sulphite and Papermakers Union, embracing Keyes personnel.

The increase came after a period of negotiations without work stoppages and represents a compromise between the original 20-cent figure asked by the union and the five-cent hike offered by the management.

Retroactive to Feb. 17 and including no change in working hours the new schedule calls for a 56 to 65 cent women's scale with an 80-cent journeyman wage for men.

H & W to Raise $4,500,000

WATERVILLE, Me., March 10, 1946 —Hollingsworth and Whitney recently became the latest Maine paper company to reveal a new post-war financing plan as it announced intention to raise $4,500,000 through sale of a new $4 preferred stock and part of its own common treasury stock. Formal vote on this plan, which includes splitting common stock on a two for one basis, will be held March 19 when directors reconvene. In the interim a prospectus for offering 42,000 shares of $4 preferred was in preparation. Price of the approximately 50 percent of common stock to be sold later had not been set.

Hauck Joins Hall Lab.

PITTSBURGH, Pa., March 16, 1946 —Establishment of a special department to handle problems of industrial waste and stream pollution has been announced by Dr. R. E. Hall, Director of Hall Laboratories, Inc., consultants in conditioning of industrial waters. The new department will be headed by Charles F. Hauck until recently engineer at Ravenna Ordnance Center and previously, for five years, senior chemist and assistant to the superintendent of Southerly Sewage Treatment Plant, Cleveland.

Eaton Wins Safety Prize

PITTSFIELD, Mass., March 16, 1946 —For more than a million man hours without a disabling injury to an employe, from June 27, 1944, to June 6, 1945, the Eaton Paper Corporation has received a distinguished service award for safety from the National Safety Council.

John Cuthbert, of the National Safety Council, presented the award to William Turner, chairman of the plant council.

3 reasons for using PC FOAMGLAS INSULATION in your plant

The ideal insulating material should be:

(1) efficient
(2) economical
(3) permanent

PC Foamglas—air sealed in glass cells—is widely known as the insulating material that meets all those requirements.

PLANT owners all over the country have installed this cellular glass material on roofs, ceilings, tanks and processing equipment, in floors and core walls. They can tell you that PC Foamglas licks the toughest insulating jobs—for good.

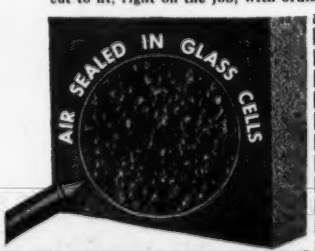
Composed of millions of tiny air-filled glass cells, PC Foamglas is impervious to moisture, vapor, vermin, the fumes of most acids, many elements that cause other materials to lose insulating efficiency. It helps to maintain temperature and humidity levels *permanently*.

PC Foamglas is light, rigid, strong. It stays in place, does not pack down, check, warp, rot, swell, shrink, or burn. Big pieces are easily handled, quickly installed. PC Foamglas needs no repairs, maintenance or replacement during ordinary use. And the sum total of those advantages is *economy*. For with PC Foamglas, first cost is last cost.

We have published complete detailed information on PC Foamglas in three illustrated booklets. Send for your free copies today. Just check and mail the convenient coupon. You incur no obligation. Pittsburgh Corning Corporation, Room 129, 632 Duquesne Way, Pittsburgh 22, Pa.

· Also manufacturers of PC Glass Blocks ·

To help maintain predetermined temperature and humidity levels in rooms where paper-making machines operate, this building has been reroofed and PC Foamglas is being installed at the Southern Craft Division, International Paper Company's plant at Georgetown, S. C. This impervious, inorganic material assures effective, economical insulation—permanently. The small picture shows how PC Foamglas Insulation can be cut to fit, right on the job, with ordinary tools.



PC FOAMGLAS *Waterproof Fireproof* **INSULATION**
T. M. REG. U. S. PAT. OFF.

Pittsburgh Corning Corporation
Room 129, 632 Duquesne Way
Pittsburgh 22, Pa.

Dear Sirs:

Please send along my *free* copies of the booklets I have checked. It is understood that I incur no obligation.

Roofs_____ Walls_____ Floors_____

*Name*_____

*Address*_____

*City*_____ *State*_____

Imports of Paper and Paper Stock

Giving Manifests of Ships Arriving At Port of New York With Cargo of Newsprint, Wrapping, Writing, Coated, Blotting, Tissue, Strawboard, Wallboard, Cigarette Papers, Sulphite, Kraft and Ground Wood Pulp.

NEW YORK IMPORTS

THREE WEEKS ENDING MARCH 16, 1946

SUMMARY

Cigarette paper	101 cs.
Newsprint	5,482 rolls
Packing paper	15 cs.
Wall paper	121 cs.
Paper hangings	2 prcls., 5 cs.
Wrapping paper	121 bls., 1,974 rolls
Sulphate paper	2 rolls
Filter paper	34 cs.
Drawing paper	4 cs.
Tracing cloth	88 cs.
Surface coated paper	26 cs.
Airmail paper	7 cs..
Writing paper	11 cs.
Decalcomania paper	226 cs.
Glazed paper	3 cs.
Tissue paper	2 cs.
Photo paper	4 cs.
Miscellaneous paper	1,094 bdls., 590 rolls, 37 cs.

CIGARETTE PAPER

Globe Shipping Co., *Indochinois,* Havre, 4 cs.
F. P. Gaskell & Co., Inc., *American Shipper,* Liverpool, 35 cs. (coated paper for cigarette tipping.)
F. P. Gaskell & Co., Inc., *Port Fairy,* Liverpool, 42 cs. (coated paper for cigarette tipping.)
F. P. Gaskell & Co., Inc., *Elizabeth Lykes,* Liverpool, 20 cs. (coated paper for cigarette tipping.)

NEWSPRINT

Bowater Paper Co., *Hamilton Park,* Pt. au Basques, N. F., 1692 rolls.
New York Journal American, *Markland,* Liverpool, N. S., 1009 rolls.
New York Herald Tribune, Inc., *Markland,* Liverpool, N. S., 1484 rolls.
New York World Telegram, *Markland,* Liverpool, N. S., 628 rolls.
Brooklyn Daily Eagle, *Markland,* Liverpool, N. S. 627 rolls.
Herald Statesman, Inc., *Markland,* Liverpool, N. S., 42 rolls.

PACKING PAPER

Home Products International, Ltd., *Juno,* La Guaira, 15 cs.

WALLPAPER, PAPERHANGINGS

W. H. S. Lloyd & Co., *Resolute,* London, 121 cs. wallpaper.
C. A. Haynes & Co., *St. Augustine Victory,* London, 5 cs. paperhangings.
H. S. Dorf & Co., *Maine,* Copenhagen, 2 prcls. (samples) paperhangings.

WRAPPING PAPER

H. S. Dorf, *Boogobilla,* Gothenburg, 1974 rolls.
Victory Shipping Co., *Boogobilla,* Gothenburg, 121 bls.

SULPHATE PAPER

Judson Sheldon Corp., *Boogobilla,* Gothenburg, 2 rolls.

FILTER PAPER

H. Reeve Angel & Co., Inc., *Samcleve,* London, 12 cs.
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H. Reeve Angel & Co., Inc., *Resolute,* London, 14 cs.
H. Reeve Angel & Co., Inc., *Eros,* London, 4 cs.

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H. Reeve Angel & Co., Inc., *St. Augustine Victory,* London, 1 cs.
H. Reeve Angel & Co., Inc., *Resolute,* London, 3 cs.

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E. Dietzgen & Co., *Empire Ettrick,* Liverpool, 25 cs.
E. Dietzgen & Co., *Idefjord,* Liverpool, 14 cs.
Keuffel & Esser Co., *Idefjord,* Liverpool, 33 cs.
———, *American Farmer,* Liverpool, 16 cs.

SURFACE COATED PAPER

Gevaert Co. of America, *Rosemont,* Antwerp, 26 cs.

AIRMAIL PAPER

The Lafayette Co., *American Banker,* Liverpool, 7 cs.

WRITING PAPER

F. L. Kraemer & Co., *Samcleve,* London, 4 cs.
Acme Fast Freight Co., *Eros,* London, 7 cs.

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B. F. Drakenfeld & Co., *Idefjord,* Liverpool, 123 cs.
———, *Empire Ettrick,* Liverpool, 1 cs. (decalcomanias).
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GLAZED PAPER

Walker Goulard Plehn Co., Inc., *Idefjord,* Liverpool, 3 cs.

TISSUE PAPER

E. Dietzgen & Co., *American Ranger,* Liverpool, 2 cs.

PHOTO PAPER

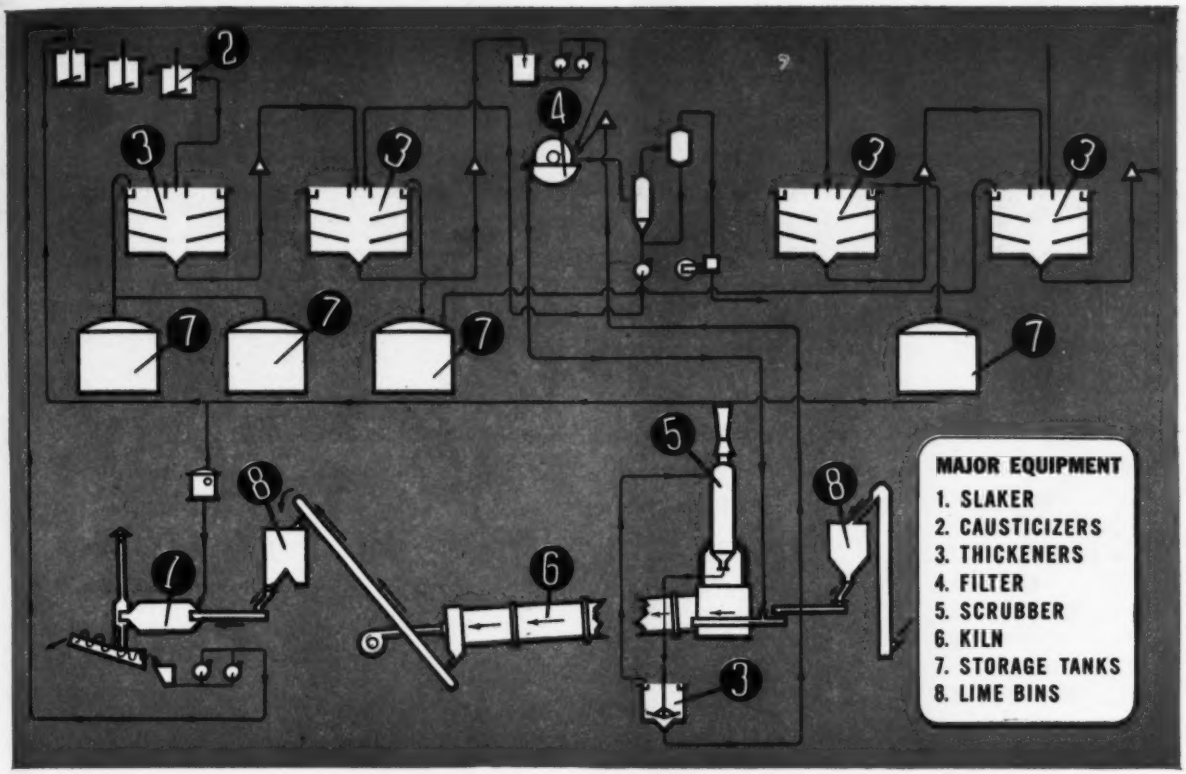
J. J. Gavin & Co., *Eros,* London, 4 cs.

MISCELLANEOUS PAPER

Clinton Paper Corp., *Hamilton Park,* Pt au Basques, N. F., 1049 bdls., 590 rolls.
———, *American Banker,* Liverpool, 32 cs.
———, *Ville d'Anvers,* Havre, 5 cs.

RAGS, BAGGINGS, PAPERSTOCK, ETC.

Castle & Overton, Inc., *American Shipper,* Glasgow, 300 bls. bagging, 47 bls. paperstock.
Harmon Lichtenstein Co., *American Shipper,* Glasgow, 222 bls. old bagging.
———, *American Shipper,* Glasgow, 56 bls. old bagging.
———, *American Shipper,* Glasgow, 94 bls. paperstock.
C. Kutz, *Cape San Antonio,* Santos, 111 bls. old pickers.
M. Granatstein & Sons, *Cape San Antonio,* Santos, 12 bls. cottonwaste.
Kroehler Manufacturing Co., *Cape San Antonio,* Santos, 922 bls. cotton linters.
Green Textile Associates, Inc., *Cape San Antonio,* Santos, 346 bls. cotton waste.
New England Waste Co., *Cape San Antonio,* Santos, 104 bls. cotton waste combers.
American Cotton Products Co., *Cape San Antonio,* Santos, 102 bls. cotton waste.
———, *American Banker,* Liverpool, 53 bls. rags.
E. Butterworth Co., Inc., *American Banker,* Liverpool, 60 bls. cotton waste.
Amtorg Trading Corp., *Marsball Govarof,* Libava, 966 bls. flaxwaste, 572 bls. cotton waste.
———, *Egidia,* Glasgow, 67 bls. paperstock.
J. Eisenberg, *Elizabeth Lykes,* Liverpool, 53 bls. rags, 1 ble. threadwaste.
E. Butterworth & Co., Inc., *Elizabeth Lykes,* Liverpool, 40 bls. cotton waste, 75 bls. bagging.
R. C. Harvey, *Elizabeth Lykes,* Liverpool, 9 bls. rags.
J. E. Bernard & Co., *Elizabeth Lykes,* Liverpool, 4 bls. rags.
Bank of New York, *Salland,* Rotterdam, 60 bls. bagging.
———, *Idefjord,* Liverpool, 52 bls. rags.
———, *Empire Ettrick,* Liverpool, 155 bls. rags, 45 bls. threadwaste.
American Express Co., *Resolute,* London, 17 bls. paperstock.



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BLOW TANKS
TURBO-MIXERS
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KILNS
THICKENERS
STORAGE TANKS
BINS
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A General American Recausticizing Plant is the cumulative effort of pulp mill men, design engineers, metallurgists, and fabrication experts.

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E. Butterworth & Co., Inc., *American Farmer,* Liverpool, 48 bls. bagging.
J. Eisenberg & Co., *American Farmer,* Liverpool, 36 bls. rags.
J. E. Bernard & Co., *American Farmer,* Liverpool, 11 bls. rags.
Manufacturers Trust Co., *American Farmer,* Liverpool, 152 bls. old wrappers.
Castle & Overton, Inc., *American Importer,* Rotterdam, 40 bls. rags, 30 bls. bagging.
E. J. Keller Co., Inc., *Fernmoor,* Alexandria, 406 bls. old rags, 42 bls. old linen tarpaulins.
J. E. Bernard & Co., *American Ranger,* Liverpool, 10 bls. rags.
Chase National Bank, *American Ranger,* Belfast, 16 bls. rags.
Crane Co., *American Ranger,* Belfast, 118 bls. linenthread waste.
Castle & Overton, Inc., *Fernmoor,* Alexandria, 376 bls. old scrap bagging, 222 bls. bagging.
Commercial Mexico, S.A., *Salmon Knot,* Vera Cruz, 37 bls. rags.

OLD ROPE, ETC.

W. Steck & Co., *City of Yokohama,* Calcutta, 125 bls. hemp rope cuttings.
Harmon Lichtenstein Co., *American Shipper,* Glasgow, 91 coils old rope.
P. J. Schweitzer & Co., *Orpheus,* Calcutta, 55 bls. old hemp rope cuttings.
———, *Empire Ettrick,* Belfast, 60 coils old rope.
R. L. Pritchard & Co., *Robert Rogers,* Port Said, 124 bls. old hemp rope cuttings.
W. Steck & Co., *Robert Rogers,* Port Said, 70 bls. old hemp string cuttings.
———, *Robert Rogers,* Port Said, 430 bls. old hemp rope cuttings.
P. J. Schweitzer & Co., *Seton Hall Victory,* Calcutta, 18 bls. old hemp rope cuttings.
———, *Seton Hall Victory,* Calcutta, 185 bls. old hemp rope cuttings.

GLUESTOCK

E. Butterworth & Co., Inc., *Elizabeth Lykes,* Liverpool, 140 bags hidecuttings.
Karr Ellis & Co., *Empire Ettrick,* Liverpool, 340 bags hidecuttings.
Trans-Atlantic Animal Byproducts Corp., *Cape San Antonio,* 1300 bags sheet bone glue.
Wessel Duval & Co., *Cape San Antonio,* 200 bags bone glue.
Atlantic Gelatine Co., *American Banker,* Liverpool, 315 bags hidecuttings.
E. Butterworth & Co., Inc., *American Banker,* 87 bags hidecuttings.
Trans-Atlantic Animal By-Products Corp., *Monroe,* Santos, 300 bags bone glue.
Trans-Atlantic Animal By-Products Corp., *White Swallow,* Rio de Janeiro, 1111 bags bone glue.
J. Gorvers, *Hastings Victory,* Antofogasta, 79 bls. gluestock.
E. Butterworth & Co., Inc., *American Farmer,* Liverpool, 110 bags hidecuttings.

CASEIN

F. H. Paul & Stein, *Rio Corrientes,* Buenos Aires, 500 bags casein.
1st of Boston International Corp., *Rio Corrientes,* Buenos Aires, 1800 bags casein.
Mercantile Metal & Ore Corp., *New Rochelle Victory,* Buenos Aires, 200 bags casein.
Lauren M. Jones Co., *Tatra,* Buenos Aires, 507 bags casein.
1st of Boston International Corp., *Tatra,* Buenos Aires, 3000 bags ground lactic casein.
American & British Chemical Co., *Tatra,* Buenos Aires, 1000 bags ground basein.
C. M. Loeb Rhodes Co., *Tatra,* Buenos Aires, 2000 bags ground casein.
American Cyanamid Co., *Tatra,* Buenos Aires, 4065 bags ground casein.
American Cyanamid & Chemical Corp., *Hastings,* Buenos Aires, 4065 bags ground lactic casein, 203211 kilos.
T. M. Duche & Sons, *Hastings,* Buenos Aires, 1000 bags ground lactic casein, 50000 kilos.

WOOD PULP

Cellulose Sales Co., *J. M. Gillis,* Sandarne & Wallvik, 6800 bls. air dry sulphate.
Price & Pierce, Ltd., *J. M. Gillis,* Sandarne & Wallvik, 6000 lbs. sulphate, 2250 bls. sulphite.
Pagel Horton & Co., *Kregeholm,* Gothenburg, 3 bls. woodpulp.

FOR SALE

2—#2-A Bird Screens
1—#1 Bird Screen
6—Impco Pulp Screens
2—N & W Mammoth Jr. Jordans
1—E. D. Jones Imperial Jordan
5—N & W Mammoth Jordans
1—Jones Imperial Jordan
2—Black-Clawson #2 Jordans
2—Black-Clawson #3 Jordans
1—#2 Dillon Jordan
6—Black-Clawson vats and molds 36 x 104
1—3-cylinder Lancaster washer
1—L-7 Nash vacuum pump and motor
1—#4 Nash vacuum pump
1—#3 Nash vacuum pump
2—14 x 14 x 16 Erie Ball variable speed engines
1—15 x 15 x 16 Ames variable speed engines
1—11 x 15 Chandler Taylor variable speed engine
1—12 x 14 Brownell variable speed engine
2—7 x 16 Beloit duplex stuff pumps
1—8 x 18 Shartle single plunger stuff pump
1—8 x 18 Shartle triplex stuff pump
1—600 Ton Dunning & Boschert hydraulic vertical press with pump
1—600 Ton Southworth hydraulic vertical press with accumulator and pumps

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The Complete Powell Line also includes Bronze and Steel Valves and Valves of all necessary types and materials for corrosion resistance.

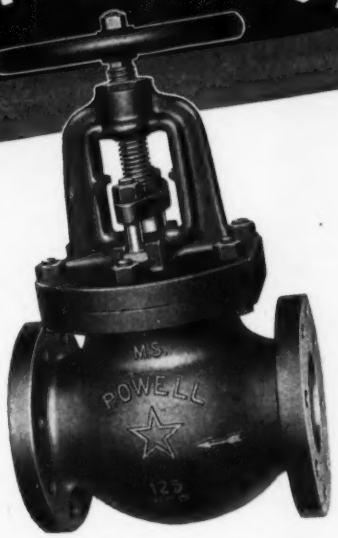

Fig. 241

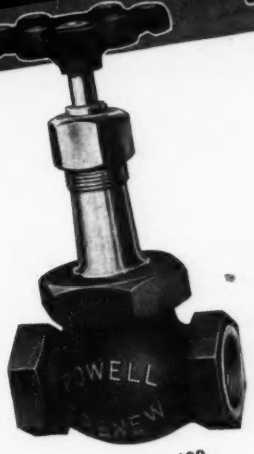

Fig. 190

Fig. 1460

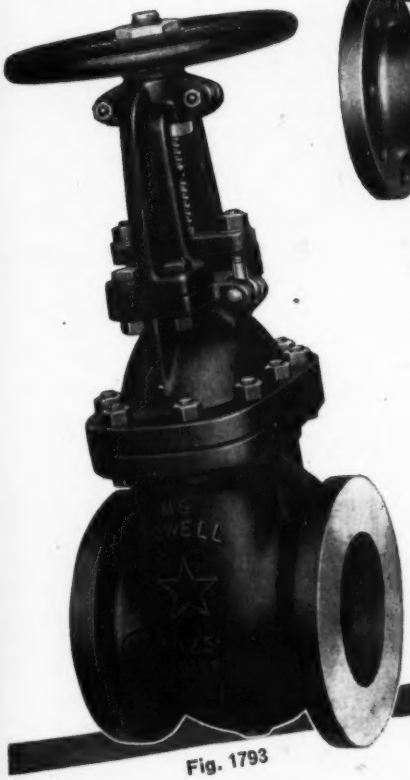

Fig. 1793

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In many services in flow control these valves will do just as good a job as valves of more costly materials. And in certain services they will do a better job than any other kind.

For every installation where an Iron Body Bronze Mounted or an All Iron Valve is indicated, Powell has the correct type, size and design to assure better performance and longer life—at the least cost of maintenance. Powell Engineers will be glad to advise you where you can profitably use Iron Valves in your flow control system. Catalogs on request.

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Fig. 1793—Iron Body Bronze Mounted Gate Valve for 125 pounds W. S. P. Flanged ends, outside screw rising stem, bolted flanged yoke, bronze seat rings and taper wedge solid disc. Sizes 2" to 30", inclusive. Also available in All Iron.

Fig. 241—Iron Body Bronze Mounted Globe Valve for 125 pounds W.S.P. Flanged ends, outside screw rising stem, bolted flanged yoke and regrindable, renewable bronze seat and disc. Sizes 2" to 16", inclusive. Also available in All Iron.

Fig. 190—Iron Body Bronze Mounted "Irenew" Globe Valve for 150 pounds W. S. P. Has screwed ends, union bonnet and regrindable, renewable wear-resisting nickel-bronze seat and disc. Sizes ¼" to 3", inclusive. Also available in All Iron.

Fig. 1460—Iron Body Bronze Mounted "Master Pilot" Gate Valve with screwed ends, rising stem, bolted flanged bonnet and taper wedge solid disc. Sizes ¼" to 2", inclusive, for 150 pounds W. S. P.; 2½" to 4", inclusive, for 125 pounds W. S. P. Also available in All Iron.

POWELL VALVES

PAPER
TRADE JOURNAL
Title Reg. U. S. Pat. Off.
W. L. Cook, Editor

HOW MANY OTHERS?

In all the flood of inquiries that have come into this office over the past few months, inquiries about sources of supply, about mills that might be bought, about the nicknames or the lodge membership of key mill executives, a quest that brought a publisher one day last week had the merit of novel ingenious reasoning. It also presented a suggestion that will cause mingled feelings of respect, of enthusiasm, and of sober caution to many a paper mill. This publisher, it appears, is getting enough paper for his present needs, though he has to spread out his business to assure his supply. For the future, he reasoned, he might establish some valuable contacts now if he could know what mills are supplying paper to those publishers and printers who are buying mills of their own. These mills, he reasoned, might be willing to hook up for the future with a reputable publisher who could be relied upon to stay with them. "And," he added confidently, "on the basis of our present 800,000 circulation we should expect to do a million and a half in a year or so."

He and how many others! The load promises to grow heavier.

AN OLD FEATURE RETURNS

With the current week's record of the news of pulp and paper affairs is resumed a feature that has been too long absent from the pages of the PAPER TRADE JOURNAL. A detailed listing of imports, interrupted these many years by war-imposed secrecy of ship movements, will be found on Page 40 of this issue. It is as yet a modest, hesitating list of figures, and may be expected to grow large again as foreign sources of paper resume their activity on a more nearly normal scale, and as shipping space becomes available to carry the cargo. Its scope may be expected to expand too, as facilities are made available to these columns to get the day-to-day record from other ports of entry.

In this, the first instalment of such figures since the curtain of war closed down on the movements of ships into New York harbor, a summary record of three weeks activity in the import market is placed in the record. The figures are complete for three weeks ending with March 16. It is planned that, as in former years, the record for each week shall be presented in the pages immediately following the close of that week. It is hoped that the trade as a whole will find in these figures the same valuable information to which many were accustomed to place their reliance before the series was stopped temporarily.

For many it may be that the resumption of this feature will produce a closer tie with the paper business in which they have grown up and to which they have given their lives. In point of fact, it is one of the oldest features of paper trade journalism, for the column was begun with the starting of the PAPER TRADE JOURNAL. For many years it was produced weekly for pages by a specialist in import statistics. He laid the work aside only when advancing years caused his retirement from active affairs, and in putting down his pen he turned the assignment over to a young man whom he had trained to be his helper. That young man, now a good many years older, carried the work forward as long as he was permitted to do so, and now, after an interval spent at war work, has resumed his practice as a customs house broker and specialist in imports for the readers of these pages. It is a pleasure to welcome back this time-tested feature and its author, George Mayer.

EQUILIBRIUM WANTED

The executive of a prominent specialty mill was quoted recently in the public prints as hoping that a promised boom in demand for the product that he manufactures would get under way very slowly indeed. Frankly, he said, he is concerned lest in the swamping volume of business that would follow a quick surge his facilities might be snowed under an even deeper pile of orders than now overwhelm them, and that he would continue even deeper into a market situation where his well-cemented relations with old and valued customers might be strained because of his inability to serve their requirements in the smooth prompt fashion that he took so much care to develop before the war. And then he will have to go through the rebuilding process all over again.

The problem, as he sees it, and he is quite content to let some one else work out the method of the solution, is to get more people back producing things at the source, where they are urgently needed, and to remove them from the lists of customer trades, where their continued existence is problematical anyway so long as there is a shortage of goods for them to resell. Until that can be accomplished, he argues—until he can deliver goods which his customers can sell at a profit, industrial production will be in a state of unbalance which does no one any good, including the customer. The only good orders are those that you can fill and collect for.

CALENDAR OF COMING EVENTS

April 1-3, 1946.—National Paper Trade Association, Annual Convention, Waldorf Astoria Hotel, New York.

June 17-20, 1946.—American Pulp and Paper Mill Superintendents Association, Annual Convention, Poland Spring, Me.

Obituary

Clarence Allen Goodrich

Clarence Allen Goodrich, president of Case Brothers, paper manufacturers at Manchester, Conn., died at his home, February 27, after an illness of two months with arthritis. Born in Victory, N. Y., April 30, 1894, Mr. Goodrich was graduated from Colgate University in the Class of 1916. He served in the U. S. Navy during World War I, and was a member of Cato, New York Lodge of Masons.

Mr. Goodrich entered the employ of Case Brothers, Inc., on January 1, 1933, as sales manager of the company and served in that capacity until the death of Harold E. Cude, general manager, in 1937, when he was appointed to that position. In May, 1938, Mr. Goodrich was appointed to the board of directors of the company and upon the death of Lawrence Case in February, 1944, he was appointed president of the company.

Mr. Goodrich leaves his wife, Mrs. Gloria (Cooper) Goodrich, and one daughter, Jacquelyn Ruth Goodrich, a student at Northwestern University, Evanston, Ill.

William A. Kingman

William A. Kingman, 69, a chemist for many years with the Dennison Manufacturing Company, Framingham, Mass., died February 20 at his residence, 35 Salem street, Framingham.

A native of Marshfield, Mass., Mr. Kingman was graduated from the Massachusetts Institute of Technology in 1899. There are living his wife, Mrs. Grace (Clark) Kingman; a daughter, Mrs. Elizabeth Brosseau, Pittsfield, Mass.; two brothers, Henry B., Dunkirk, N. Y., and Edward D., Brookline, Mass.; and four sisters, Misses Mary L. and Anna A., Framingham, and Alice E., Cleveland, and Mrs. Helen T. Cole, Medfield, Mass., and four grandchildren.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1946		Corresponding Weeks—1945	
Feb. 2	101.5	Feb. 3	88.8
Feb. 9	99.7	Feb. 10	90.1
Feb. 16	95.0	Feb. 17	91.0
Feb. 23	98.0	Feb. 24	89.7
Mar. 2	101.8	Mar. 3	89.3
Mar. 9	*103.4*	Mar. 10	87.7

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1945	86.7	89.4	90.2	88.1	89.8	91.2	80.8	88.6	90.2	95.9	95.5	91.0	89.7
1946	97.4	*98.4*											

COMPARATIVE YEARLY SUMMARIES

	1939	1940	1941	1942	1943	1944	1945	1946
Year to Date	78.9	86.6	88.1	103.8	88.4	88.4	87.7	*96.9*
Year Average	83.4	85.6	97.4	90.4	87.8	88.1	89.7	

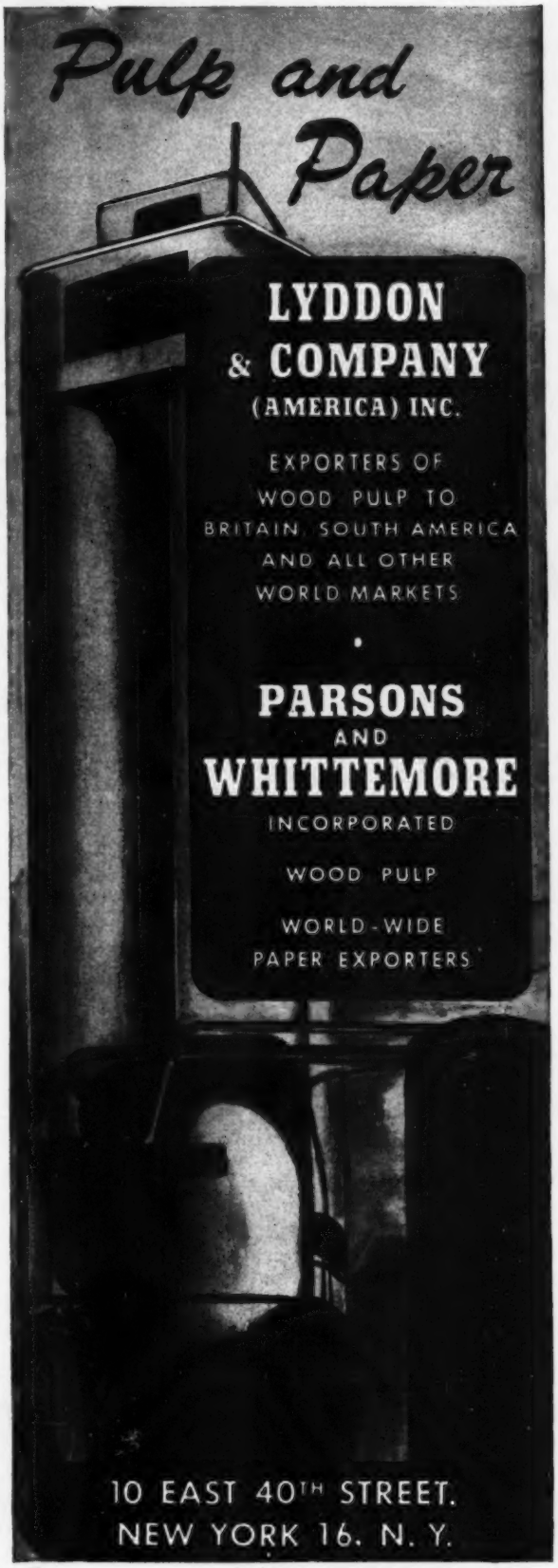
*Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS †

Current Weeks—1946		Corresponding Weeks—1945	
Feb. 2	95	Feb. 3	92
Feb. 9	97	Feb. 10	93
Feb. 16	94	Feb. 17	93
Feb. 23	97	Feb. 24	97
Mar. 2	98	Mar. 3	96
Mar. 9	99	Mar. 10	94

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1945	91	95	97	97	96	96	86	90	91	97	95	85	93
1946	90	97											

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.



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New and wider uses for paper have been created by PAREZ resin 607, the synthetic paper resin that imparts superior wet and dry strength to all types of raw stock.

Soon, because of these unprecedented characteristics, wet strength paper may successfully replace cloth in the manufacture of bed sheets, pillow cases, towels, wash cloths, handkerchiefs, table cloths and napkins, and diaper backings.

The success of such new applications is assured by the remarkable performance of wet strength paper in wartime maps, toweling, food wrappers, containers, shipping tags, and field note books. Wet strength paper has also come into its own in the manufacture of absorbent papers, bag and sack papers, saturating papers, photographic papers, poster papers, twisting papers, and wrappings.

PAREZ 607 can be added directly to the fiber finish during paper manufacture. It serves to bind the fibers together with a bond that is insoluble in water and most other liquids. As the paper comes off the machine, tests reveal outstanding improvements in bursting and tensile strength, along with a pronounced increase in folding endurance. Furthermore, PAREZ bonding does not adversely affect such properties of paper as color, opacity, or surface characteristics.

For full details on the utilization of Cyanamid's melamine paper resin, PAREZ 607—which offers opportunity to endow your products with new sales features—see your Cyanamid representative or write to the nearest Cyanamid office.

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Fillers • Defoamers • Soda Ash
Caustic Soda • Salt Cake • Acids
Clays • Satin White • Aerosol* Wetting Agents • Calmicro (Calcium Carbonate)
and other Paper Chemicals
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Section of the
TECHNICAL ASSOCIATION
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122 E. 42nd St., New York 17, N. Y.
Edited by R. G. Macdonald, Secretary

An Ink-Line Test for the Determination of Degree of Sizing in Writing Paper*

By Milton O. Schur[1] and Robert M. Levy[2]

Abstract

A test is described for the determination of the effectiveness of the sizing in writing paper. It has the advantage of being objective and direct. The method is based upon the measurement of the surface spread of ink lines drawn under closely reproducible conditions. The instrument employed for drawing the lines and its operation are described, and a standard ink is discussed. Typical research data obtained with the aid of the test are presented.

The problem of measuring the effectiveness of sizing in writing paper is more complicated than might at first be thought. Although an ordinary pen-and-ink test may furnish some idea of ink-fastness, observers are apt to vary in their judgment of results to a disconcerting extent, particularly if the paper is indifferently sized. Lack of agreement may be laid to a number of variables, e.g., the type of pen-point used, whether sharp, stub, or ball; the nature of the pen stroke, whether bold or light; the quantity of ink on the pen; and the status of the observer, i.e., whether manufacturer of the paper, seller, or buyer. Such a test is of value in the quick detection of serious sizing defects but its use as a control test in papermaking or as a research tool suffers because of its crudence, its dependence upon the subjective element, and its lack of numerical expression, so necessary as the basis of reliable records and of comparative measurements.

Many of the more formal tests for size-fastness, in use or proposed, seek to eliminate the personal factor and to express results in numbers. There are methods involving measurement of the rate of penetration of ink through the sheet; also procedures employing a dry indicator sprinkled upon or painted on one side of the paper, sensitive to some type of electrolyte applied to the other side; and a similar test involving the use of a fluorescent dye as the indicator. Still another method uses as its basis the rate of pick-up or absorption, of water. Various electrical methods are also employed, and these, too, are based in one way or another upon fluid penetration. The many and various modifications introduced in these methods are, in the main, for the sole purpose of establishing an accurate, well-defined end-point.

For many products and specialized applications these penetration tests may be extremely valuable and may serve admirably the purposes for which they were designed. However, they leave much to be desired in the evaluation of writing paper for penetration tests give only an indirect measure of the feathering tendency of the ink on the sheet. They fail to detect differences in the ink-resistance of the two sides of the sheet, and in many instances are difficult, if not impossible, to interpret, particularly when complicating variations in sheet thickness are encountered in the comparison of different samples of paper. In addition, the determination of the end-point in penetration tests usually involves the personal element to an undesirable extent.

The Ink-Spread or "Line" Test

A simple, direct test for the determination of the ink-fastness of writing paper was developed by one of the authors many years ago *(3)*. Recently the test was critically reappraised, slightly modified, and employed in a series of experimental investigations. The results have verified its value not only for control purposes but as a tool in research on writing paper.

In outline, the method involves the drawing of ink-lines under reproducible conditions and the measuring of the width of the dried lines. From the dimensions of the pen and of the dried lines, the spread of ink on the paper and, hence, the ink-resistance of the paper specimen is ascertained. The measurements are substantially as free from personal opinion as any ordinary determination of length; the precision of the numerical results depends chiefly upon the number of observations made and upon the degree of uniformity of the sizing. For the calculation of results, the thickness or weight of the paper specimen need not be known.

If the subjective element is to be avoided, the use of a common steel pen in the drawing of the test lines is out of the question. Although a draftsman's pen would be an improvement over the common pen *(2)*, it is far from satisfactory, for the spread of ink may be influenced markedly by the head of ink in the pen, the pressure on the pen, the width, tilt, and sharpness of the pen, the angle between the line being drawn and the plane through the slot in the pen, and the velocity with which the line is drawn.

These variables have been eliminated or reduced

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* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 25-28, 1946.

[1] Member TAPPI; Technical Director, Ecusta Paper Corporation, Pisgah Forest, N. C.

[2] Member TAPPI; Director of Fundamental Research, Ecusta Paper Corporation, Pisgah Forest, N. C.

to negligible importance in a rotary ruling pen of special design. The pen consists essentially of a brass frame supported on three small wheels, 0.5 inch in diameter. One of the wheels has a circumferential slot of uniform width and depth, and comprises the pen proper. If the slot is inked full and the rotary pen rolled along a sheet of paper, a line will be drawn. The initial head of ink in such a pen is evidently fixed; the pressure may be conveniently standardized by means of a definite weight carried by the wheels; the width of the pen slot is, of course, constant; the pen is always tangent and at right angles to the paper; sharpness does not enter into the test, for the pen rolls without cutting or otherwise disturbing the surface fibers; "skidding" of the pen is avoided by proper design; the pen velocity may be regulated and kept constant mechanically.

Apparatus

The rotary pen and carriage are shown in Fig. 1. The apparatus ready for use is shown in Fig. 2. A scale drawing of the pen proper is given in Fig. 3.

The shaft carrying the slotted pen and guide wheel are turned from a single piece of rod, preferably Monel metal. The pen carriage is constructed so that it can be inverted when the pen is not in use, and the pen as well as the two guide wheels thereby kept from touching the surface of the table or other place of rest.

The pen carriage is propelled by means of a flexible cord attached at one end to the carriage by hooks and at the other end to the surface of a drum rotated by a small gear-head motor. A pen speed of 1 inch per second has been found suitable.

The pen assembly weighs 300 grams. A variation in weight of $\pm 10\%$ has but little effect upon the results.

A glass plate furnishes a smooth and hard backing for the paper being tested. Wedges are provided at one edge of the plate to hold the pen off the surface of the paper prior to the commencement of a "line"-test. They serve also to clamp the paper specimen in place.

Operation of the Apparatus

The sheet of paper to be tested, after being trimmed to convenient size, is placed in position on the glass plate. The rotary pen, detached from the propelling cord, is lifted into a convenient position and is filled with standard ink from a dropper until a pendant drop has collected. To ensure complete filling of the slot, the drop is picked off only after the pen shaft has been rotated slowly at least once with the finger. Should the ink show any tendency to collect on the outside of the slot, as it may when the dry pen is first inked, the pen should be rubbed at and near the outside of the slot with paraffin wax. It may be found difficult to ink the pen for the first time or after it has been idle, but once the walls of the slot are wet, capillarity will draw the ink into the slot and the pen will fill easily. The pen assembly is now placed right side up on the two wedges, and the propelling cord hooked on to the pen carriage. The motor is started, and is kept running until a line about 8 inches long has been drawn on the specimen. The carriage is then raised off the paper and placed back on the wedges. The paper specimen is moved slightly and a second line is drawn parallel to the first. This procedure is repeated until the desired number of lines have been drawn. Three are generally sufficient. The pen is then cleaned free of ink with an absorbent filter paper.

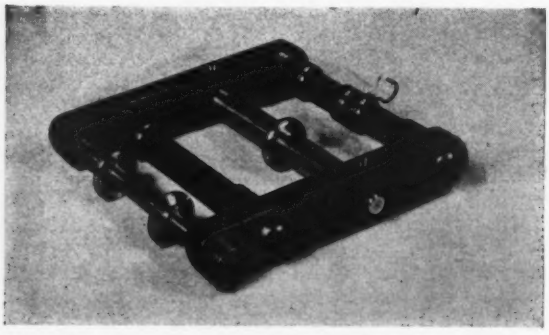

Fig. 1
Rotary Pen and Carriage

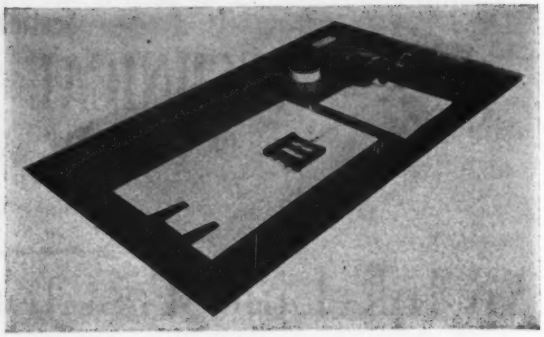

Fig. 2
Rotary Pen and Accessory Apparatus

A 2½ inch strip containing the central portion of the ink lines is now cut out of the specimen undergoing test and is examined for ink-spread.

Examination of the Ink Lines and Calculation of Results

The strip of paper containing the three ink lines is placed between two ordinary microscope slides, which are then placed on the stage of a microscope arranged to magnify 100 diameters. The lines are positioned parallel to the direction of movement of the stage micrometer. The first line is brought into focus and the first field obtained by setting the stage micrometer at zero. The maximum width of the line anywhere in the field is recorded. The stage micrometer is then moved by 1.0 cm. intervals, and the maximum width of the image noted in the field at each setting, until five values have been taken for each of the lines. These readings are averaged, and from the mean is deducted the width of the pen-slot.

The width of the pen slot is conveniently determined in a few minutes with the aid of a microscope set to magnify about 100 diameters and provided with a calibrated ocular micrometer. If the pen has been properly machined, it will present a uniform appearance, free from scratches or minute nicks, and will have a regularity of width such that the average deviation from the mean of ten readings taken around the pen will be less than ½%. (A little consideration will show that it is the smoothness of finish that is the essential factor, the regularity of width being of decidedly secondary importance.) The edges of the pen should be reasonably acute, otherwise they may introduce an unnecessary uncertainty in the measurement of the effective width of the pen slot, for dur-

ing the drawing of a line, the ink tends to flow from the outer edges of the periphery of the pen.

The difference between the value of the mean of the maximum readings and the width of the pen slot when divided by the pen-slot width is a measure of the ink spread or of feathering.

$$\% \text{ Spread} = \frac{100 \times \text{Average Maximum Width of Ink Line} - \text{Pen Slot Width}}{\text{Pen Slot Width}}$$

A few words are necessary on the reasons for the choice of the maximum width reading for each setting of the microscope rather than the width of the line, at say, the central ordinate in each field. The advantages to be gained by the use of the maximum widths are two-fold: first, the maximum ink spread has the greater significance in the actual use of the paper; second, certain well-sized papers do not take the ink readily, so that the line drawn with the rotary pen is apt to be slightly broken or irregular; hence a maximum width for each microscope setting furnishes more regular and consistent results.

In Fig. 4 are shown typical Camera Lucida drawings taken from several tests where the average maximum per cent spread was as indicated.

Standardization of Ink

The selection of a standard ink for use in the line test was given much thought. Commercial inks differ to a marked degree. They vary in acidity, i.e., in pH,

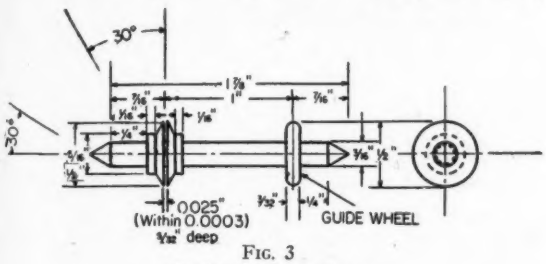

FIG. 3
Details of the Pen Proper

some contain iron salts, others contain surface active agents, they differ in dye concentration and type; yet it is necessary to impart to the standard ink certain properties which will produce feathering similar to that obtained with typical commercial pen-ink. Furthermore, the standard ink should be simple to prepare from easily obtainable reagents, and batches of ink made up by different operators must give closely concordant results.

The ink decided upon for the line test is a 1.0% solution of methylene blue (medicinal grade) in ½% phosphoric acid.

The basic dye in acid solution is adsorbed relatively little by the paper *(1)*. The coloring matter in the ink consequently tends to spread with the water to an extent directly indicative of the effectiveness of sizing against common pen-ink.

If the resistance of the paper to the spread of the so-called quick-drying fountain pen inks, in contrast to the more common inks, is to be measured, surface active agents,—for example, diethylene glycol—may be added to the standard ink in controlled amount, say, 2%. Ink may "dry" to a greater or lesser extent by penetration into the paper; an extreme instance is the "drying" of a blot of common ink with blotting paper. The addition of penetrating agents to fountain pen ink, as in the case of one nationally advertised grand, manifestly creates new sizing problems. Such problems are best studied with the aid of a standard ink to which a controlled amount of a carefully selected penetrating agent has been added.

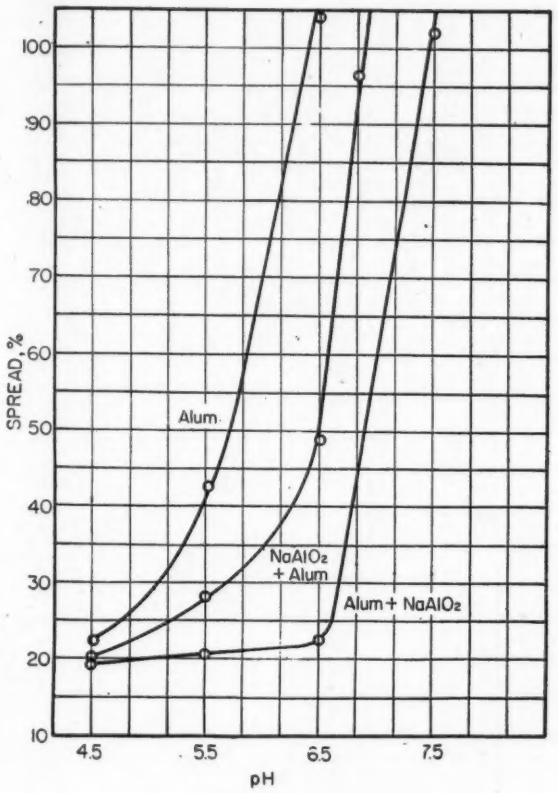

FIG. 5
Influence of pH on the Degree of Sizing

FIG. 4-A
Camera Lucida Drawing of a Field Where the Average Maximum Per Cent Spread is 10%

FIG. 4-B
Camera Lucida Drawing of a Field Where the Average Maximum Per Cent Spread is 20%

FIG. 4-C
Camera Lucida Drawing of a Field Where the Average Maximum Per Cent Spread is 30%

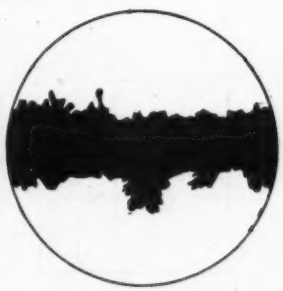

FIG. 4-D
Camera Lucida Drawing of a Field Where the Average Maximum Per Cent Spread is 50%

After numerous tests it was noted that the spread obtained with the standard methylene blue-phosphoric acid ink rarely falls below a value of 10% on commercially available paper. Based upon the composite judgment of a large number of observers and upon the comments of paper retailers, various levels of values obtained in the ink spread test may be differentiated or interpreted as follows:

Average Maximum Per Cent Spread	Degree of Sizing
10-15%	Excellent
15-20%	Good
20-25%	Fair
25-30%	Borderline
30% and above	Poor

Influence of Humidity

A point which bears consideration in the line test is the influence of humidity on the results. It was found, as might be expected, that a variation in the humidity at which the paper is seasoned affects the test results.

Typical results obtained under conditions of variable humidity are given in the tabulation below:

Relative Humidity at 70° F., %	Av. Maximum Spread, %
20	29
34	46
47	56
65	63
85	56

The drop in spread at the highest humidity is noteworthy. Tests on a number of different samples of paper gave similar results.

A Few Experimental Results Obtained with the Line Test

The ink-line method of testing size-fastness permits any practical difference between the two sides

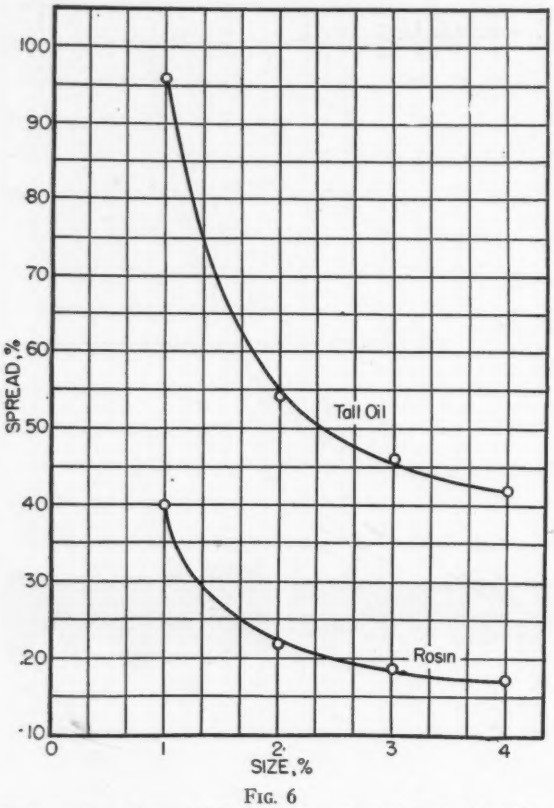

Fig. 6

Influence of the Amount of Size Added on the Surface Spread of Ink

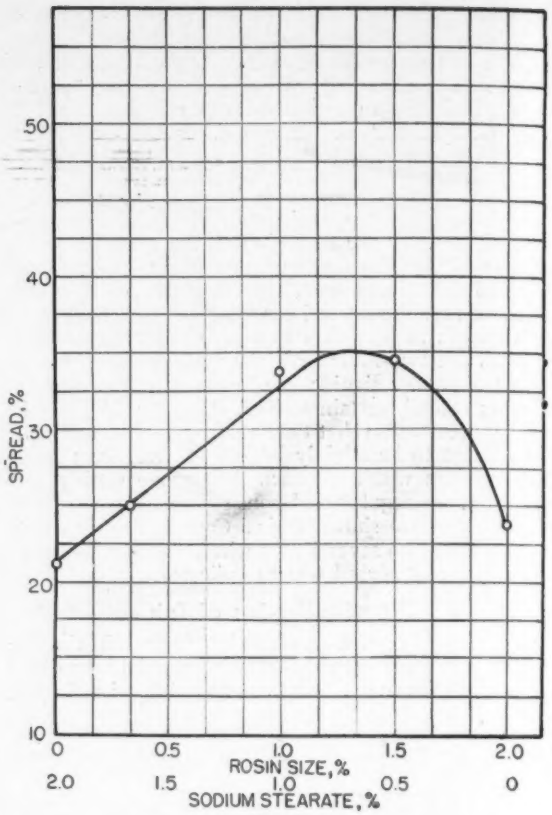

Fig. 7

Relative Sizing Effectiveness of Mixtures of Rosin and Stearate

of a sheet to be detected and measured. Following are the results of tests on several types of commercial writing-paper. Similar differences have been noted on laboratory handsheets.

Sheet Number	Average Maximum Spread, %	
	Wire Side	Felt Side
1	24.2	17.8
2	31.2	28.5
3	32.7	32.8
4	18.3	19.4
5	18.6	20.5
6	18.6	19.2
7	19.4	21.4
8	19.4	19.5
9	29.0	26.0
10	16.0	14.3

It was reasoned that since the maximum component of fiber length is in the machine direction, ink-spread should normally be poorest for a line drawn in the cross direction. That this is actually the case was readily established, and several typical results on commercial paper are given in the following:

Sheet Number	Maximum Spread, %	
	Machine Direction	Cross Direction
11	26.0	29.5
12	20.4	28.6
13	21.6	24.2
14	17.3	20.1
15	36.7	42.2
16	32.7	33.4
17	30.0	37.0
18	26.0	36.0
19	16.1	18.3
20	20.9	21.1

As shown in Fig. 5, the ink-line test also furnishes a valuable indication of the trends which occur when the sheet is sized under different pH conditions. In this series of experiments, handsheets were made from a 100% flax fiber furnish, the size used was a

commercial 70% combined-rosin size, and in every case the amount of size added was 2% rosin based on weight of paper.

Also shown in Fig. 5 is the effect of 1.0% sodium aluminate, based on weight of fiber, added either before or after the addition of various amounts of alum.

The curves in Fig. 6 show the variation in per cent spread when the amount of size is varied at pH 4.5. Also given in Fig. 6 is a comparison between the sizing effectiveness of a purified tall oil size (90% combined) with that of the commercial rosin size.

In Fig. 7 are plotted data on the sizing effectiveness of rosin size and sodium stearate mixtures, precipitated with alum at a pH of 4.5. The fact is noteworthy that mixtures of rosin size and sodium stearate give poorer results than either constituent alone.

The data shown in Figs. 5, 6, 7 were obtained on handsheets prepared from bleached flax pulp. Both sides of the sheet were tested and the results averaged.

Literature Cited

1. Alexander, Jerome, "Colloid Chemistry," Vol. IV, page 211, New York, N. Y., The Chemical Catalog Co., 1932.
2. Noll, August, *Papier-Fabrikant* 32: 349-352 (1938).
3. Schur, M. O., U. S. Pat. 1,691,739 (Nov. 13, 1928).

Southern Horizons

D. Van Nostrand Company has recently issued Southern Horizons, by William Haynes, former publisher of Chemical Industries. (316 pp. 5½ x 8½). This book is easy reading with excellent large type and the skilled technique of Mr. Haynes who has done much to popularize technology as he did previously in The Stone That Burns, Men, Money, and Molecules and This Chemical Age.

Covered in this book are interesting chapters on the cotton, vegetable oil, lumber, pulp-paper-by-products, chemurgy, minerals, gas and oil, chemicals, etc. The chapter on the Pine Inventory outlines the present great problem related to the expansion of the pulp and paper industry. The chapter on pulp and paper pays tribute to Charles Herty and the work that he did in his Savannah, Ga., pilot plant in focusing attention on southern pulpwood resources. Considerable attention is given to the future growth prospects through the use of abundant hardwoods and the utilization of pulpmill by-products. Although much of the contents of the book is based on opinions of individuals, talked to by Mr. Haynes the material published may be considered as good observations and reporting.

Copies may be obtained from the Book Department of the Technical Association of the Pulp and Paper Industry, 122 East 42nd Street, New York 17, N. Y., at $2.75 per copy.

Correction

In the paper by Reichert, Mills, and Campbell, Peroxide Bleaching of Mechanical Pulps—Influence of Bacteria and Enzymes—Part I which appeared in the January 31, 1946 issue of the PAPER TRADE JOURNAL, the following correction is to be noted. The last line in Table II on page 39 gives the per cent residual peroxide after ½ hour and after 1 hour with the addition of increasing amounts of bacteria to a peroxide bleaching solution as follows: after ½ hour with 1 ml. of suspension 14.8% residual peroxide and after 1 hour 99.3% residual peroxide. These two figures should be changed to read: 4.8% after ½ hour and 0.0% after 1 hour.

TAPPI Notes

A. M. Altieri, formerly of the Fitchburg Paper Company, is now chief chemist for the Tileston & Hollingsworth Company, Hyde Park, Boston, Mass.

George J. Clark of the Hollingsworth & Whitney Company, Mobile, Ala., is now in the Veterans Hospital, Biloxi, Miss.

C. E. Hartford is now manager of the Union Bag & Paper Company, Savannah, Ga.

Richard S. Buckley is now superintendent of the Fernstrom Paper Mills, Pomona, Cal.

Miss Carola Trittin, formerly of the Container Corporation of America, is now research chemist for the American Coating Mills, Elkhart, Indiana.

Lt. Frank J. McLeod, USN, formerly of Rayonier, Inc., is now sales engineer for the Owens-Corning Fiberglas Corporation, Toledo 1, Ohio.

Robert G. Vaeth, formerly of the Army, has returned to the Tonawanda Boxboard Div., Robert Gair Company, as mill chemist.

J. C. Shouvlin, president of The Bauer Bros. Company, Springfield, Ohio, has replaced Charles L. Bauer, retired, as official representative of his company in the Technical Association of the Pulp and Paper Industry.

F. A. Burningham, formerly microscopist for the Brown Company, has joined the staff of the Institute of Paper Chemistry, Appleton, Wis.

R. M. Wright, recently of the South African Pulp and Paper Company, and now a manufacturer's agent in Pretoria, South Africa, is visiting in the United States. Companies desiring paper, pulp or machinery representation in South Africa can reach Mr. Wright through the Technical Association.

K. Olle Haeger, managing director of Lilla Edets Paper Mill, Lilla Edet, Sweden, is visiting in the United States.

The Optical Properties Committee of the Technical Association of the Pulp and Paper Industry is working in cooperation with the National Bureau of Standards, the ASTM and the AATCC on the problem of establishing a standard method for calibrating fadeometers and setting up fading specifications for pulp and paper. The committee is desirous of knowing the number of companies directly and indirectly related to pulp and paper that have fadeometers and who are interested in having standards established for determining the degree of fading. This method of bringing this problem to the attention of the industry is being used in preference to a survey or questionnaire. It is hoped that all interested will respond. Replies and requests for the Bureau's paper for calibration should be addressed to Dr. A. H. Croup, Chairman, TAPPI Optical Properties Committee, Hammermill Paper Company, Erie, Pa.

The TAPPI Delaware Valley Section will meet at the Engineers Club, Philadelphia, Pa., on Friday, April 5, 1946, at 6:30 p.m. John Dieffenderfer of the Hercules Powder Company, Wilmington, Del., will lead a discussion on Protective Coatings. Several representatives of the Hercules Powder Company will present phases of this subject.

Lt. C. W. Converse, formerly of the Army, is now with the Hopper Paper Company, Reading, Pa.

Herbert C. Church, formerly chemist with the American Coating Mills, is now with the New York & Pennsylvania Company, Lock Haven, Pa.

H. D. King, formerly with Todd & Brown, La Porte, Inc., is now a consulting industrial chemist and engineer at 7258 Artesian Avenue So., Chicago.

Resin Impregnation Of Catfaces

Effect of New Methods of Turpentining Upon the Resin Content of Slash Pine Catfaces

By Herman Skolnik[1] and Albert G. Snow, Jr.[2]

Abstract

Resin impregnation resulting from current turpentining practice renders the turpentined "catface" portion of naval stores pines undesirable for paper pulp, thus preventing the full utilization of two of the South's most important tree species, the slash and longleaf pines of the naval stores belt. Recent research, however, has developed new methods of turpentining which apparently do not increase the resin content of the butt log beyond the limits of acceptability for pulp. Preliminary data on catfaces so produced are presented in this report.

The amount of resin in the wood has long been an important factor in the manufacture of pulp, because of the necessity of modifying the pulping process according to the resin content of the raw material used. Early interest in the resin content of slash pine was shown by Kurth and Sherrard (*1*), who studied the distribution of ether extractives in unturpentined second-growth trees at three levels and depths of the tree. The outer, intermediate, and center rings of the tree for all levels had the following average ether-soluble content: 2.47, 3.74 and 9.27%, respectively. However, at 4 feet above the ground (the butt section), these figures were definitely higher and averaged 3.07% in the outer, 4.47% in the intermediate, and 16.5% in the center rings. The total ether extractive from two lots of 31 and 37 trees in a pulpwood shipment was 2.5 and 3.3%, respectively.

Although a resin content of about 3% average does not affect the suitability of slash pine for pulp, higher percentages are undesirable. If resin-soaked material is included in charges processed by methods adapted to wood of average resin content, digestion is incomplete and quality and yields of pulp accordingly low. That the resin content of the ordinary catface is great is evident by mere visual inspection of their cross section. These scarred, resin-impregnated, and fire-blackened catfaces which characterize the piney woods, and which represent up to 30% of the total volume of worked-out naval stores trees, are ordinarily sawed off during logging operations and either left in the woods or sold cheaply as fuel.

New methods of turpentining described in recent publications of the Southern Forest Experiment Station (*2, 3, 4*) offer a possible solution to this perplexing utilization problem. Bark chipping in combination with acid stimulation is of particular interest to pulpwood processors as well as to naval stores operators. Instead of progressing up the tree ½ inch each week with "streaks" cut or "chipped" to a depth of ½ inch into the wood, as in the conventional system, bark chipping consists of peeling off a ½-inch-high strip of bark down to but not including any wood. The exposed wood of the fresh scar or "streak" is sprayed immediately after chipping with a solution of sulphuric acid which greatly stimulates the flow of gum therefrom.

In an experimental adaptation of this method, aimed at quick liquidation of gum values through high yield in a short period, bark chipping and acid treatment were used on from one to six standard-width turpentine "faces" per tree. Although multiple-face techniques have not progressed beyond the experimental stage, they show promise of exceptional gum yields and leave the butt log in much better condition for utilization for poles, ties and lumber, and apparently for pulpwood.

Methods

The catface specimens from variously turpentined experimental trees were collected at the Lake City, Florida Work Center of the Southern Forest Experiment Station, and were analyzed at Hercules Powder Company, Brunswick, Georgia.

Trees included in this study averaged from 12 to 15 annual growth rings in the butt section, and were essentially similar as regards previous history and physical and physiological characteristics. They were divided into three groups, each group being defined by the number of faces per tree—one, four, or six as indicated in Table I. In each group, half the trees were treated with acid immediately after each chipping, and the other half were untreated. All the trees were bark-chipped ½ inch high at weekly intervals throughout the 1944 turpentine season.

The catfaces, as cut from the selected trees after completion of turpentining operations, contained some wood not immediately in the catface region. This excess wood was trimmed off and a composite sample made of each butt section. Each composite sample was ground to a proper size and analyzed for water, oil of turpentine, and resins.

Discussion of Results

The oleoresin yield figures given in Table I are averages for groups of similarly treated trees, rather than actual yields of the individuals from which catface samples were taken for analysis. As such, they give a better indication of the possibilities of acid stimulation, a subject which has been discussed in detail in other publications (*2, 3, 4*).

As shown by the data presented in Table I, all the catfaces examined in this study proved to be particularly low in resin content indicating that a minimum of pitch soaking (also known as lightwood formation or oleoresin impregnation) resulted from the turpentining methods used. These data are in sharp contrast with the 15% or more resin found in the catfaces of trees turpentined in the usual manner for periods ranging up to 21 years. Indeed, it will be noted that the maximum amount of resin in even the multiple catfaces is well within the limits of acceptability for pulpwood.

Whether or not there is a relationship between pitch soaking and the number of faces put on a

[1] Hercules Experiment Station, Hercules Powder Co., Wilmington, Del.
[2] Southern Forest Experiment Station, U. S. Forest Service, New Orleans, La.

TABLE I.—EFFECT OF ACID TREATMENT AND NUMBER OF FACES ON OLEORESIN YIELDS AND IMPREGNATION OF CATFACES

Tree * Number	No. of Faces per Tree	Treatment	Tree Diameter, in.**	Growth Rings	Heartwood Thickness, in.	Oleoresin Yield Per Tree, grams/24 streaks	Catface Analysis		
							Water Content, %	Turpentine Oil Content, gal./ton wood	Resin Content, % (dry basis)
15	1	None	8.5	13	3/4	1896	48.0	Trace	2.37
18	1	40% H_2SO_4	8	13	1	3987	45.0	Trace	1.93
22	1	None	8	12	3/4	1896	46.0	Trace	2.35
9	1	40% H_2SO_4	9	12	3/4	3987	34.0	0.25	2.15
85	4	None	8	13	3/4	4421	42.0	Trace	2.39
21	4	40% H_2SO_4	8	12	3/4	6119	44.0	0.63	1.79
97	6	None	8	14	3/4	4728	42.0	0.24	3.17
127	6	40% H_2SO_4	7.5	15	1/2	5609	40.0	0.48	3.13

* The tree numbers indicate the specific tree marked in a given large plot of trees.
** Diameter of tree in the region of the catface.

tree is not definitely established by these data. The resin content of the four-face catfaces, 1.79% for the treated and 2.39% for the untreated sample, is of the same order as the resin content of the single-face catfaces. On the other hand, the resin content of the six-face catfaces, 3.13% for the treated and 3.17% for the untreated sample, is appreciably larger than the resin content of the single-face catfaces. Further investigation is needed to determine whether these differences are real. It is apparent, however, that so far as resin content is concerned all of these catfaces are suitable for pulping.

In three samples, acid stimulation seems to have induced less resin impregnation, and in the fourth only slightly more impregnation, than found in their companion untreated samples. Actually, it is probable that sulphuric acid treatment had no effect on the amount of pitch soaking. The differences shown by the analytical data are more likely due to individual variations in the trees than to chemical treatment, especially since the differences are so small. These data, limited though they may be, appear to refute the common belief that as much resin remains in a tree as turpentining takes out. There is no recognized physiological basis for this belief; but neither, previously, has there been any evidence to the contrary.

Although acid treatment does not seem to affect resin impregnation, the data suggest an increase in the amount of turpentine oils. The oils impregnated in the acid-treated samples are more than double the amount in the untreated samples. However, because the total amount is slight in even the acid-treated catfaces, the difference appears magnified and may be of no significance.

Visual inspection of cross sections from several parts of each catface was made. When compared with untreated faces, the treated faces showed somewhat larger heartwood formation and more localized pitch soaking, particularly in areas affected by wind shakes and wounds. However, the amount of heartwood was small in all cases, and the differences noted are not considered indicative. It is difficult to conceive how previous heartwood formation could be influenced by current season's turpentining.

Because of the anomaly in heartwood formation, the cross sections were examined under ultraviolet light to determine qualitatively by fluorescence the regions of resin impregnation. This analysis revealed that, in the acid-treated catfaces, resin impregnation was comparatively greater in the outer two or three rings, around knots, in areas affected by wind shake, and in the heartwood. In contrast, the impregnated resin in the untreated catfaces was distributed over a larger area and showed little or no concentration anywhere except in the outermost ring. Here again, though, the differences are small and of questionable significance.

The data obtained in this preliminary study suggest some interesting tendencies but are too meagre to justify definite conclusions regarding the differences noted between treated and untreated catfaces and between those with varying number of faces. The observed differences may have been due largely to obscure variations in the environment or heredity of the trees studied. A much larger number of samples must be studied in order definitely to determine the effects of acid treatment and number of faces on the amount and distribution of resin and turpentine oil in the catface. On the other hand, there can be little doubt about the suitability for pulpwood of catfaces resulting from the quick-liquidation turpentining methods here described. In no case was the resin content of the catface appreciably greater than in the butt log of unturpentined trees of the same species.

Acknowledgment

The authors are indebted to Mr. Herman Gay, Hercules Powder Company, Brunswick, Georgia, for the analysis of the catface samples, and to Dr. H. L. Mitchell, Officer in Charge, Southern Forest Experiment Station, U. S. Forest Service, New Orleans, Louisiana, for assistance in writing this paper.

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1. Kurth, E. F., and E. C. Sherrard. *Ind. Eng. Chem.* 23, 1158-9 (1931).
2. Snow, A. G., Jr., Southern Forest Experiment Station Occasional Paper No. 106, Sept. 1, 1944.
3. Mitchell, H. L., *Naval Stores Review* 55, Nos. 1, 2 and 3, 1945.
4. Ostrom, C. E., *Chemurgic Digest* 4, 240-243 (1945).

Almeron W. Wickham

Almeron W. Wickham died at his home in Gloucester, N. J., in February at the age of 84 years. Mr. Wickham was born in Manchester, Conn., on May 21, 1862 and graduated from the Hartford High School, following which he was employed by the Hartford Manila Company who made paper for the U. S. Envelope Company. This company was reorganized in 1890 as the Wickham Manufacturing Company where he was superintendent. In 1902 Mr. Wickham joined the New Haven Pulp and Board Company and in 1907 became employed by the Mutual Box Board Company at Utica, N. Y. In 1908 he went with the John H. Boyle Company in Jersey City and joined the MacAndrews & Forbes Company in Camden, N. J., in 1910. He retired from this company a few years ago.

Mr. Wickham was a member of the Technical Association of the Pulp and Paper Industry since 1929 and was also a member of the Superintendents Association. He is survived by William E. Wickham, a son and two daughters Martha E. and Amethyst Wickham.

Microscopy Committee Report*

By F. A. Burningham[1]

The Microscopy Committee has had four formal projects on its list for the past two years:

Projects

1. Project 42: Weight factors for microscopical analysis.
2. Project 105: Identification of fibers other than wood in papers.
3. Project 111: Study of the "C" stain.
4. Project 204: Monograph on microscopic optics, illumination, and photomicrography.

Project 42 is essentially a nonterminating one because of the additions and corrections that are periodically being made and submitted to the committee for incorporation into TAPPI Method T 401. "Additional Weight Factors of Pulps" *(1)* was presented by John H. Graff in October 1944 under this project.

Project 105 is a continuation of studies presented in TAPPI Suggested Method T10 sm-41. The reproductions of photomicrographs accompanying the descriptive portion of this method are rather poor and the committee desires to replace them by better ones as soon as possible. Additions to the list of fibers discussed may be made in the future.

Project 111: A cooperative test of this stain was made several years ago with fairly satisfactory results. Since that time more laboratories have adopted it, and in the report by Fred W. Bentzen, as Chairman of the Microscopy Committee, in 1940 *(2)* 17 of the 61 mills that replied to a questionnaire sent out by the chairman signified that they were using the "C" stain. The number of laboratories that are now using it is unknown, owing to the fact that no questionnaire has been sent out since 1940, but a substantial increase over the 17 reporting in 1940 would undoubtedly be shown today.

The summer course in microscopy, held annually at the Institute of Paper Chemistry for several years, has been instrumental in familiarizing many fiber microscopists with the use of the "C" stain, and has contributed much to the advancement of the art of fiber analysis to the status of an exact science.

Project 204 has been completed by John H. Graff during the year 1945 and will appear in print.

Literature Survey

A description of a new stain for the identification of papermaking fibers appeared in May 1945 *(3)*. This stain was developed by Norval F. Wilson, Chief Chemist of the Alton Boxboard Company.

A report on the "Stain Reaction of Unbleached and Bleached Groundwood Pulps" by John H. Graff *(4)* appeared in April 1944.

A description of a new lignin stain that is believed to react with an aldehyde normally accompanying lignin appeared in January 1944 *(5)*. This stain utilizes sulphanilamide as the active ingredient.

An article entitled "Photomicrographs by Projection," by Jules J. Perot, Jr., and Charles G. Schultz *(6)* appeared in December 1943.

An article entitled "Projection Arrangement for Determination of Fiber Dimensions" by John H. Graff and J. R. Feavel *(7)* appeared in February 1944.

An article on "The Number of Fibers per Gram of Pulp, and Its Relation to Fiber Dimensions" *(8)* by John H. Graff, appeared in September 1943.

The following references to articles on microscopy are appended with literature citations:

1. The Manipulation of the Microscope, by F. D. Armitage *(9)*.
2. Microscopy of Plastics, by C. Gordon *(10)*.
3. Microscopy with Plastic Substitutes for Cover Glasses, by Oscar W. Richards, John H. Small, and P. Wardham Collyer *(11)*.
4. A Cellulose Nitrate Embedding Method for Paper Sections, by F. D. Armitage *(12)*.
5. Improved Microscopical Examination in Papermaking, by A. G. Arend *(13)*.
6. Preparation of Thin Sections of Synthetic Resins and Wood-Resin Composites, and a New Macerating Method for Wood, by G. L. Franklin *(14)*.
7. Some Applications of Microscopy to Cotton Research, by T. L. W. Bailey, Jr., and Mary L. Rollins *(15)*.
8. Notes on Microscopy, by F. D. Armitage *(16)*.

The chairman has taken these references from the various journals and bibliographies available to him but does not guarantee that the list is complete.

Committee Membership

The membership of the Committee on Microscopy has undergone several changes during the past two years. Lewis S. Reid, Prof. F. W. O'Neil, and Dr. J. W. Appling have resigned, and C. P. Donofrio, of the New York State College of Forestry, and Thomas Fyfe, of Eastman Kodak Company, have joined the committee. Negotiations are under way with with the University of Maine with the object of obtaining the services of their microscopist on the committee as soon as he returns from military duty.

A rather comprehensive agenda has been prepared for a committee session during the annual meeting of TAPPI in New York, February 25-28, 1946. At this session the committee expects to review progress made since the last meeting, and to plan work for the year ahead.

Literature Cited

1. *Paper Trade J.* 119, No. 15: 41-42 (Oct. 12, 1944); *Tech. Assoc. Papers*, 27: 139, 471.
2. *Paper Trade J.* 112, No. 5: 29-33: TAPPI Special Report 313 (Feb. 4, 1941).
3. *Paper Ind.*, pp. 215-216 (May, 1945).
4. *Paper Trade J.* 118, No. 16: 29 (April 20, 1944); *Tech. Assoc. Papers*, 27: 134, 370.
5. *Manufacturing Chemist* (London) 15: 6 (Jan., 1944).
6. *Paper Trade J.* 117, No. 23: 33 (Dec. 2, 1933); *Tech. Assoc. Papers*, 27: 519, 616.
7. *Paper Trade J.* 118, No. 7: 140-145 (Feb. 17, 1944); *Tech. Assoc. Papers*, 27: 139, 283.
8. *Paper Trade J.* 117, No. 17: 25-31 (Oct. 21, 1943); *Tech. Assoc. Papers*, 27: 520, 654.
9. *Ind. Chemist* 19, No. 223: 447-54; No. 224: 495-500; No. 225: 549-54 (Aug.-Oct., 1943).
10. *Chem. & Ind.* 62, No. 44: 420 (Oct. 30, 1943).
11. *Stain Tech.* 19, No. 2: 59-62 (April, 1944).
12. *Patra J.*, No. 4: 60-6 (May, 1944).
13. *Papermaking and Printer* 62: 12-14 (Spring, 1944).
14. *Nature* 155, No. 3924: 51 (Jan. 13, 1945).
15. *Textile Research* 15, No. 1: 1-6 (Jan., 1945).
16. No. VI Cork. *Patra J.* 8, No. 3: 65-8 (Feb., 1945).

* Presented by title at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 25-28, 1946.

[1] Member TAPPI; Chairman, TAPPI Microscopy Committee; Research Chemist and Microscopist, Brown Co., Berlin, N. H.

Report of Standards Committee for 1945*

By Roger C. Griffin [1]

During the year 1945 the war and readjustments from its effects have continued to interfere with the production of TAPPI standards and methods. Nevertheless, their number and quality continues to progress and they are recognized as authoritative both here and abroad.

New and Revised Standards

There were seven new tentative standards approved during the year and submitted to the secretary for publication:

T 15 m-45. Ash in Wood (*1*).
T 228 m-45. Bacteriological Examination of Pulp and Slush Stock (*2*).
T 229 m-45. Water-Soluble Sulphates and Chlorides in Pulp (*3*).
T 468 m-45. Water-Soluble Sulphates and Chlorides in Paper and Paperboard (*4*).
T 630 m-45. Melting Point of Paraffin Wax (*5*).
T 631 m-45. Bacteriological Examination of Mill Process Water (*6*).
T 804 m-45. Compression Test of Fiberboard Shipping Containers (*7*).

Four new suggested methods were approved and published:

T 16 sm-45. Sieve Analysis of Pulpwood Chips (*9*).
T 469 sm-45. Flexural Resistance and Deflection of Fiberboard (*10*).
T 470 sm-45. Edge Tearing Resistance of Paper (*11*).
T 805 sm-45. Water Resistance of Shipping Containers (Shower Method) (*8*).

As a result of valuable and constructive criticisms, Suggested Method T 469 sm-45, which was published in July, was promptly revised to meet the objections and the revision was published in December *(12)*.

Revisions of four standards and one suggested method were approved and published:

T 410 m-45. Basis Weight of Paper and Paperboard (*13*).
T 449 m-45. Bacteriological Examination of Paper and Paperboard (*14*).
T 451 m-45. Rigidity, Stiffness, and Softness of Paper and Paperboard (*15*).
T 460 m-45. Air Resistance of Paper (*16*).
T 469sm-45. Flexural Resistance and Deflection of Fiberboard (*12*).

A correction in Standard T 403 m-44, Bursting Strength of Paper, was published in April *(17)*.

Five suggested methods were approved for advancement to tentative standards:

T 217 sm-42. Brightness of Pulp.
T 452 sm-42. Brightness of Paper.
T 458 sm-42. Surface Wettability of Paper.
T 461 sm-44. Flammability of Treated Paper and Paperboard.
T 629 sm-44. Analysis of Sulphite Waste Liquor.

Nine tentative standards were recommended for submission to vote of the TAPPI membership for advancement to official standards:

T 218 m-45. Forming Handsheets for Optical Tests of Pulp (as corrected May, 1945).
T 220 m-42. Physical Testing of Pulp Handsheets.
T 227 m-43. Freeness of Pulp.
T 437 m-43. Dirt in Paper.
T 446 m-42. Creasing Quality of Paper.
T 456 m-44. Wet Tensile Breaking Strength of Paper and Paperboard.
T 457 m-42. Stretch of Paper and Paperboard.
T 462 m-43. Printing Ink Permeation of Paper (Castor-Oil Test).
T 466 m-44. Degree of Curl and Sizing of Paper.

During the year the committee had before it for action 32 standards and methods as compared with 28 during the year 1944. One of these, a method for testing analytical filter papers, was still under consideration at the end of the year.

Contents of Book of Standards

Further attention was given to unifying the language and format of methods and standards previously published and correcting typographical and other errors, and this work has been completed.

Late in the year there were mailed to the membership for inclusion in the looseleaf book of standards and methods new and revised alphabetical indexes and 63 items as follows: 4 new official standards, 8 new tentative standards, 1 new suggested method, 2 revised official standards, and 48 corrected standards and methods.

During the past two years 84 standards and methods have been issued in corrected form for the looseleaf book. The material in the book now comprises the following:

	Tentative	Official	Total
Standard Recommended Practices	2	10	12
Standard Specifications	1	1	2
Standard Testing Methods	37	92	129
Suggested Methods	..	..	19
Total			162

This is an increase of 8 over last year's report.

Routine Control Methods

Attention is again called to the recommendation made in the report for 1944 that the Executive Committee consider ways and means for standardizing and publishing a new series of testing methods which might be designated as Control Methods.

Work of Committees

The new and revised standards and methods accepted by the Standards Committee during the year came from the following committees:

	New	Revised	Total
Fibrous Materials Testing	2	0	2
Nonfibrous Materials Testing	1	1	2
Paper Testing	3	4	7
Pulp Testing	1	0	1
Container Testing	2	0	2
Bacterial Control Methods	2	1	3
	11	6	17

As usual, the Paper Testing Committee, under the chairmanship of B. W. Scribner, has continued to show commendable activity in regard to testing methods.

The Bacterial Control Methods Committee, under the chairmanship of R. H. Torrey, has also done a valuable piece of work in regard to T 449 sm. Originally accepted in 1940 as a suggested method for the Bacteriological Examination of Paper and Paperboard, this method also included the testing of pulp, slush stock and water. It has now been rewritten to cover only paper and paperboard and the new method has been accepted as Tentative Standard T 449 m-45. Two new methods have been written, based on similar procedures, and have been accepted as tentative standards; namely, T 228 m-45, Bacteriological Examination of Pulp and Slush Stock, and T 631 m-45, Bacteriological Examination of Mill Process Water.

The work of the Container Testing Committee has also made progress. With the two new methods added during the year there are now three tentative standards and three suggested methods for tests of con-

* Presented by title at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 25-28, 1946.

[1] Member TAPPI; Chairman TAPPI Standards Committee; Vice-President, Arthur D. Little, Inc., Cambridge, Mass.

tainers. There are several other methods in the offing and Don L. Quinn, the chairman, has evidently organized the committee for production.

It is hoped that, with the war over, the various committee chairmen will now have an opportunity to take account of stock and organize for active participation in the important work of preparing new standards and testing methods. They should not forget, however, that it is equally important to keep existing TAPPI standards and methods up-to-date by periodically reviewing them and making revisions where desirable.

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1. *Paper Trade J.* 120, No. 13: 33 (March 29, 1945).
2. *Paper Trade J.* 121, No. 4: 41 (July 26, 1945).
3. *Paper Trade J.* 121, No. 1: 31 (July 5, 1945).
4. *Paper Trade J.* 121, No. 5: 29 (Aug. 2, 1945).
5. *Paper Trade J.* 120, No. 15: 41 (April 12, 1945).
6. *Paper Trade J.* 121, No. 5: 31 (Aug. 2, 1945).
7. *Paper Trade J.* 121, No. 22: 33 (Nov. 29, 1945).
8. *Paper Trade J.* 121, No. 24: 49 (Dec. 13, 1945).
9. *Paper Trade J.* 121, No. 11: 38 (Sept. 13, 1945).
10. *Paper Trade J.* 121, No. 2: 35 (July 12, 1945).
11. *Paper Trade J.* 121, No. 18: 37 (Nov. 1, 1945).
12. *Paper Trade J.* 121, No. 26: 43 (Dec. 27, 1945).
13. *Paper Trade J.* 120, No. 16: 49 (April 19, 1945).
14. *Paper Trade J.* 121, No. 3: 44 (July 19, 1945).
15. *Paper Trade J.* 121, No. 20: 31 (Nov. 15, 1945).
16. *Paper Trade J.* 121, No. 23: 39 (Dec. 6, 1945).
17. *Paper Trade J.* 120, No. 16: 30 (April 19, 1945).

Kalamazoo TAPPI Discusses Water

The Kalamazoo Valley Section of the Technical Association of the Pulp and Paper Industry met in the Columbia Hotel, Kalamazoo, Mich., on Thursday, March 7th. R. C. Germanson of the Kalamazoo Vegetable Parchment Company presided as chairman. Benjamin Soffe of the Permutit Company talked on Modern Methods of Water Purification. Merton Fogerty of the Bryant Paper Company discussed, briefly, the sources of water used by paper mills in various sections of the country. Much of this is surface water. In the Kalamazoo Valley all of the water used is subterranean. There was a good general discussion of these subjects.

Those present were: Ralph Atkins, Clifford Beebe, P. W. Bartholomew, D. D. Bachelder, W. R. Carlisle, C. T. Colgren, C. W. Cassell, A. W. Cole, A. G. Dreis, Merton S. Fogerty, Myron Flotow, J. M. Gillespie, C. E. Gardner, George D. Gerpheide, R. C. Germanson, H. H. Gottsleben, J. B. Higley, Frank Hamilton, Bill Hathaway, Stephen Kukolich, L. M. Kinney, Bill Kirkpatrick, L. H. LaLiberte, Charles Lillie, Lee H. Mimms, D. H. Militzen, H. Nendorf, Norman R. Stilwell, A. L. Sherwood, B. F. Soffe, W. R. Tobin, R. W. VanKirk, H. W. Ware, R. M. Weaver, Walter Wolfe.

TAPPI Notes

C. E. Hartford is now mill manager of the Union Bag & Paper Company, Savannah, Ga.

Richard S. Buckley, formerly chemist, is now superintendent of the Fernstrom Paper Mills, Pomona, Cal.

The TAPPI New England Section will meet at the Roger Smith Hotel, Holyoke, Mass., on Friday, March 22nd.

H. G. Rappold of the J. O. Ross Engineering Company will talk on "New Developments in Drying Equipment for the Coating of Paper."

The TAPPI Pacific Section will meet at Bellingham, Wash., on April 2nd. A feature of the meeting will be a visit to the new alcohol plant of the Puget Sound Pulp & Timber Company.

New TAPPI Members

The Executive Committee of the Technical Association of the Pulp and Paper Industry has elected the following to membership:

Roald W. Alten, Manager, A/S Rowal, Thv. Meyersgt. 30 b, Oslo, Norway, a 1929 graduate of Oslo Handelsgymnasium.

James A. Cochrane, Chemical Engineer, Pacific Mills Ltd., Ocean Falls, B. C., Canada, a 1945 graduate of the University of British Columbia.

Harold S. Crane, Superintendent, Self-Locking Carton Co., Palmer, Massachusetts, a 1928 graduate of Northeastern University.

Thomas Fyfe, Microscopist, Eastman Kodak Co., Kodak Park Works, Rochester, New York. Attended the University of Rochester.

James H. Hull, Research Chemist, Crown-Zellerbach Corp., Camas, Washington, a 1933 graduate of the University of Washington.

Booth G. Leavitt, Research Engineer, Robert Gair Co., Inc., New London, Connecticut, a 1942 graduate of the University of Maine.

L. Sydney Morley, Supervisor, Container Research, Continental Can Company of Canada Ltd., Montreal, P. Q., Canada.

Edward G. Penn, Sales Promotion, Riegel Paper Corp., 342 Madison Avenue, New York, New York. Attended Columbia University.

Freeman Perry, 315 Garden Drive, Manchester, Connecticut. Attended McGill University.

Francis T. Ratliff, Student, Institute of Paper Chemistry, Appleton, Wisconsin.

Leslie S. Simser, Technical Representative, American Cyanamid & Chemical Corp., 138 Central St., Watertown, New York, a 1932 graduate of Pratt Institute.

Robert F. Sylvester, Chemist, Parsons Paper Company, Holyoke, Massachusetts, a 1942 graduate of the New York State College of Forestry.

James R. Wellman, Technical Service Engineer, American Cyanamid & Chemical Corp., Kalamazoo, Michigan, a 1922 graduate of Michigan State College.

John J. McNair, Research Chemist, Pulp Div., Weyerhaeuser Timber Co., Longview, Washington. Degrees from Carleton College, University of Minnesota and University of Idaho.

Philip A. Nussbaumer, Technical Director, Pollock Paper & Box Co., 2236 South Lamar St., Dallas, Texas, a 1937 graduate of the University of Pittsburgh.

George H. Salzer, Assistant Paper Mill Superintendent, Rayonier, Inc., Grays Harbor Div., 23rd & Railroad Ave., Hoquiam, Washington.

Dalton L. Shinn, Research Chemist, Crown-Zellerbach Corp., Camas, Washington, a 1935 graduate of the University of Wisconsin.

L. Jay Smith, Partner - Manager, McCoy Paper Converters, 3rd & Huntington Sts., Philadelphia 33, Pennsylvania.

Alver E. Sprinkle, Plant Superintendent, Congoleum-Nairn, Inc., Cedarhurst, Maryland.

Philip R. Temoin, Pulp Quality Supervision, Pacific Mills Ltd., Ocean Falls, B. C., Canada. Attended University of British Columbia.

Ralph N. Thompson, Technical Director, Falulah Paper Co., Fitchburg, Massachusetts, a 1940 graduate of the Massachusetts Institute of Technology.

John W. Wainwright, Laboratory Assistant, Pacific Mills Ltd., Ocean Falls, B. C., Canada, a 1945 graduate of the University of British Columbia.

Testing Analytical Filter Papers*

TAPPI Suggested Method T 471sm-46

This method describes various testing procedures for the evaluation of analytical filter papers used in ordinary analytical work. Improved methods for retentiveness to fine precipitates, flow of water, and ash, and a procedure for wet bursting strength are included (*1*). In addition the following tests are used, the procedures for which are described in the TAPPI standard methods indicated: Thickness (T 411 m) and weight in grams per square meter (T 410 m). Density is calculated from these values.

Tests for alpha-cellulose (T 429 m), copper number, (T 430 m), and acidity as pH (T 435 m) indicate the purity of the cellulose and the stability of the papers. A high content of alpha-cellulose and a low copper number are characteristic of cellulose of a high degree of purity, that is, cellulose that has not been degraded appreciably. Degraded cellulose is partially soluble in some solutions and therefore may pass into filtrates and cause erroneous analytical results. Both degraded cellulose and high acidity result in unstable paper that may become too brittle for satisfactory use. (*See* Additional Information).

Retentiveness to Fine Precipitates

Dissolve 0.55 gram of K_2SO_4 in 275 ml. of water and add 1.0 ml. of conc. HCl. This solution contains the equivalent of about 0.25 gram of $BaSO_4$. Heat to boiling, and while at the boiling temperature, add slowly and with continuous stirring 25 ml. of a 5% solution of $BaCl_2 . 2 H_2O$. It is very important to have the specified concentration of acid and to keep the solution at the boiling temperature during the precipitation. Let stand without agitation in a boiling water bath for 2 hours ± 15 minutes. Prepare at least four circles of the filter paper, folding in the usual way for filtration in 60° long-stemmed funnels (about 6 inches); that is, so that the angle at the apex of the filter paper is slightly greater than that of the funnel. Stir the precipitate until it is evenly suspended in the liquid, and filter approximately 50 ml. of the mixture through each circle of paper, collecting the filtrates in 250-ml. Erlenmeyer flasks. Swirl the filtrates to bring any precipitate to the center and view from above against a black background for the presence of $BaSO_4$. In this manner 0.3 mg. or less can be detected. The paper is considered unsatisfactory for retention of fine precipitates if any $BaSO_4$ is visible in the filtrate.

Filtration Time *(2)*

Prepare distilled water by prefiltering it through filter paper that filters at least as slowly as the paper to be tested. Use two or more filters in series. For each kind of filter paper to be tested, a volume of prefiltered water equal to three or four times the volume of the cone will usually be sufficient. If a considerable quantity of water is to be prepared, the filters should be renewed frequently, because they lose their effectiveness with continued flow of water through them.

Carefully fold a filter circle in the usual way to form a 60° cone. Place it in a 60° funnel and fill it with water prepared in the manner described. Press down the folds to expel all air pockets and to make the three plies smooth and in good contact. Allow about three fourths of the water to filter through, then pour off the excess. Save the water to wet the next specimen. Remove the empty cone and suspend it freely over a buret by supporting the cone in a loop of wire of such size that it will support the cone at about two thirds of the distance from its apex.

Using prefiltered water at a temperature of 23 ± 2° C., pour into the cone, all at once, a measured volume which is approximately two thirds of the volume of the cone. When one fifth of the water has filtered through into the buret, start a stopwatch. When half the remaining volume has filtered through, stop the stopwatch and record the time in seconds. Test at least ten circles, using the same water over and over and adding to it from the prepared supply as found necessary.

The time required to filter half the volume of water remaining in the conical filter is substantially the same for any given paper, irrespective of the size of the test specimen. Suitable volumes of water initially poured in for filter circles of the sizes most generally used are as follows:

Diameter of Circle, *cm.*	Initial Volume, *ml.*
11	25
9	15
7	7.5
5.5	3.5

Report the filtration time in seconds and state the diameter in centimeters of the filter paper used for the test.

NOTE: For some reason that has never been explained, satisfactorily, the rate of flow of liquids through filter paper, and other porous materials, becomes progressively slower with continued flow. It has been found, however, that the change in rate can be almost eliminated for filter paper by prefiltration of the water used in making the test.

Ash

The necessity for very accurate determination of ash content, together with the small amount present, requires special modifications of the standard method for ash in paper. A large test specimen but as small an ignition crucible as possible are required for good accuracy. These conditions are fulfilled by wetting the filter paper with distilled water, thus permitting compact wadding of the paper for conservation of space. The use of a tare crucible and special precautions in the testing operations are necessary. The details of the method are as follows:

Use 20-ml. platinum crucibles with covers. Carry a tare crucible with a cover through all operations exactly the same as the crucibles used for the tests. The tare crucible must have practically the same weight and surface area as the test crucible. (For convenience in weighing the lightest crucible should be used for the tare.)

Heat the crucibles and covers in a muffle furnace at approximately 925° C. Cool in a desiccator and weigh to the nearest 0.1 mg. Dry about 6 grams of the paper to constant weight at 100 to 105° C. and

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This method is suggested by the Paper Testing Committee as being the most suitable to date. It is not, however, a TAPPI Standard. Criticisms are earnestly requested and should be sent to R. G. Macdonald, Secretary, Technical Association of the Pulp and Paper Industry, 122 E. 42nd St., New York 17, N. Y. Reprints of this method may be obtained from the Secretary at 25 cents each.

weigh to the nearest 0.01 gram. Wet the paper with distilled water containing not more than 10 p.p.m. of igneous solids, then roll it into a compact mass with clean fingers. Put the test specimen in a crucible, cover it, and place it in a cold muffle furnace. Start the ignition and after smoking has ceased remove the cover and continue the ignition for 2 hours at 925° C. Replace the cover, cool and weigh the crucible and ash. The ignition is considered to be complete when the weight of the ash becomes constant after reignition for 30 minutes. All the cooling must be done in a desiccator, and the test crucibles and tare crucible must be allowed to remain on the balance pans the same length of time. The ash must be protected from air currents at all times.

Duplicate determinations shall be made, and the tolerance of agreement and the manner of reporting the average value shall be as follows:

% Ash	Agreement of Duplicates in Percentage	Round off to Nearest	Report Milligrams per 11-cm. Circle to Nearest
Less than 0.025	0.003	0.001	0.01
0.025-0.1	0.01	0.005	0.05
More than 0.1	0.02	0.01	0.1

Wet Bursting Strength

Clip together a pack of five circles of the filter paper, and immerse the pack in distilled water at 23 ± 2° C. for 5 minutes. Remove the pack, allow it to drain suspended for 10 seconds, then immediately determine the bursting strength according to TAPPI Standard T 403 m. Use enough packs to obtain not less than ten values. Report the average wet bursting strength of five sheets to the nearest ¼ point.

Thickness, Weight, and Density

Determine the thickness of at least ten separate circles with a dial micrometer according to TAPPI Standard T 411 m, calculate and report the average value to the nearest 0.0002 inch.

Weigh a pack of not less than ten sheets on a chemical balance, and report the weight as grams per square meter to the nearest 0.1 gram.

Calculate the density from the thickness and weight, as grams per cubic centimeter to the nearest 0.01 gram.

Calculation:

Let t = thickness, inch,
w = weight, grams per sq.m.,
and D = density, grams per cc.

Then, $D = \frac{w}{25{,}400\,t}$

Additional Information

Relative to the condition of the cellulose and the acidity of filter papers, the following information is given by Scribner and Wilson *(1)*: A double acid-washed filter paper that had become brittle during storage had only 72% alpha-cellulose, a high copper number of 3.3 and a pH value of 4.5. Comparative figures for good paper of the same type and grade are: alpha-cellulose 96%, copper number 0.4, and acidity 6 pH. For good stability the pH value for paper should not be below 5.

Literature Cited

1. Scribner, B. W., and Wilson, W. K., "Methods for the Evaluation of Analytical Filter Papers", *J. Research Natl. Bur. Standards* 34; 453 (1945): *Research Paper* RP 1653.
2. Bogaty, H., and Carson, F. T., "Measurement of Rate of Flow of Water Through Filter Paper," *J. Research Natl. Bur. Standards* 33:353 (1944); *Research Paper* 1613.

Soap in Industry

The Chemical Publishing Company has recently issued Soap in Industry by Georgia Leffingwell and Milton Lesser (204 pp. 5½ x 8½). An eight page chapter is devoted to paper and packaging. Copies may be obtained from the Book Department of the Technical Association of the Pulp and Paper Industary, 122 East 42nd Street, New York 17, N. Y., at $4.00 per copy.

Niagara Falls TAPPI Hears About England

The March meeting of the Western New York group of the Empire State Section of the Technical Association of the Pulp and Paper Industry was held as a joint dinner meeting with the Niagara branch of the Technical Section of the Canadian Pulp and Paper Association. This was held at the General Brock Hotel, Niagara Falls, Ontario, Wednesday evening, March 13th, with over one hundred in attendance.

The principal speaker was Trevor Potts of the Imperial Chemical Industries of England who spoke on war-time paper making in Britain and its lessons for the post war years. During the war Mr. Potts was associated with the Robert Fletcher Company of England. He described very interestingly the unique conditions under which paper was made during those times. The supply of materials used in the paper making industries were frozen and under government contract. He jokingly mentioned that government forms required for raw materials used most of the paper produced.

Formerly the principal raw materials used in the manufacture of their paper were sulphite pulp and esparto grass. As the war progressed these supplies were cut off and paper makers were forced to use whatever materials were readily available in the country. These principal raw materials were oat straw and wheat straw. Some attempts were also made to utilize waste from furniture factories for making pulp. The British paper makers went so far as to use what they call Number 13 waste which consisted literally of the dregs of the domestic ash-can. The contents of this waste can be left to the imagination of the individual.

Mr. Potts outlined the difficulties involved in converting wheat and oat straw into pulp suitable for making paper. This process was all together different than the various ones used in cooking esparto grass. In spite of these difficulties the paper makers produced from these straws a paper very similar to that produced formerly with esparto grass.

Mr. Potts described the difficulties involved in maintaining the paper machines in running order. It took much ingenuity and perseverance on the part of the maintenance staff to keep the machines in running order. The paper mills suffered surprisingly little damage from bombings. In two instances production was halted completely.

The lessons to be learned from these experiences are remarkably valuable. Mr. Potts pointed out that war time conditions have taught them that what had seemed to be the impossible was and really can be accomplished. It also shows the need for cooperation and exchange of technical information among paper makers as a whole.

The meeting concluded with a color movie by the Powell River Pulp and Paper Company of British Columbia. This movie showed the manufacture of newsprint from the raw materials in the forest to the printed paper delivered to the door.

NEKOOSA PORTABLE WOOD PEELER

Savings

ADAPTABLE TO A VARIETY OF OPERATING CONDITIONS

If wood is peeled in the woods freight on bark is eliminated, less weight per cord of wood is shipped thus reducing freight. Shrinkage per cord is reduced. Wood can be peeled mechanically at less cost than the differential between peeled and rough wood.

Large Capacity
Low Cost Operation
No Wood Loss

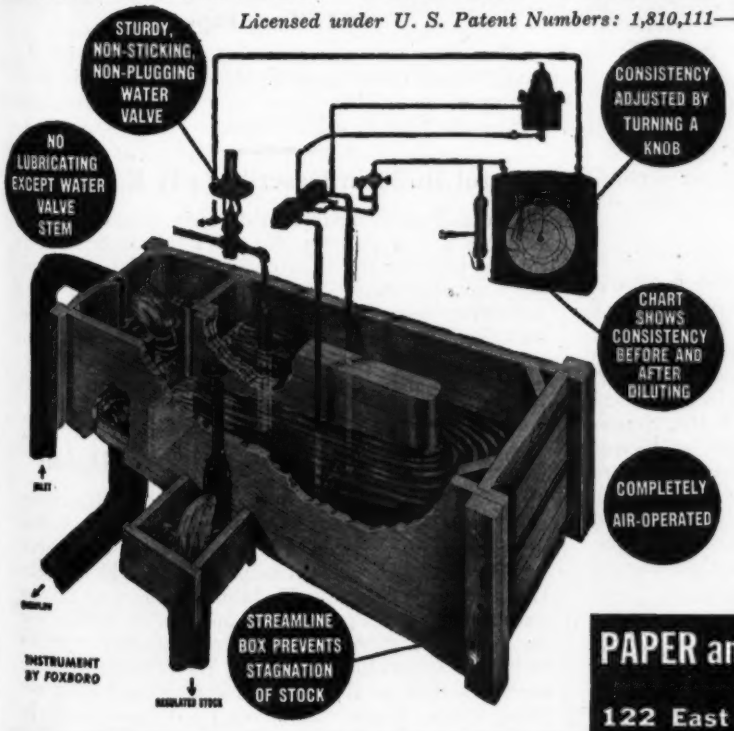
manufactured by

Nekoosa Foundry & Machine Works Inc.

Nekoosa, Wis. U. S. A.

BRAMMER RECORDING CONSISTENCY CONTROL

Licensed under U. S. Patent Numbers: 1,810,111—1,884,075—2,302,326—2,302,327


STURDY, NON-STICKING, NON-PLUGGING WATER VALVE
NO LUBRICATING EXCEPT WATER VALVE STEM
CONSISTENCY ADJUSTED BY TURNING A KNOB
CHART SHOWS CONSISTENCY BEFORE AND AFTER DILUTING
COMPLETELY AIR-OPERATED
STREAMLINE BOX PREVENTS STAGNATION OF STOCK
INSTRUMENT BY FOXBORO

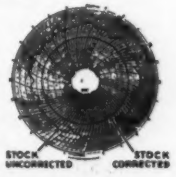
"RECORDED" CONSISTENCY . . . BEFORE and AFTER dilution plus Accurate Regulation of both consistency and volume.

Not just a sample . . . the ENTIRE VOLUME passes through the Regulator.

No moving parts in the stock. Highest efficiency in handling all grades of stock. Low maintenance costs.

Complete air operation. Measuring and control efficiency at its maximum. No lags or bumps from mechanical friction.

Write for Brammer Catalog



24 hour record chart, showing consistency before and after diluting water has been supplied.

PAPER and INDUSTRIAL APPLIANCES
Incorporated
122 East 42nd Street, New York, N. Y.

New York Paper and Pulp Market Review

Paper Production Near Record With Distribution Improving — Short Lumber Supply May Limit Pulpwood Output—Swedish Pulp Production At 65% of Capacity—Waste Paper Market Is Strong.

Office of the PAPER TRADE JOURNAL,
Wednesday, March 20, 1946.

Distribution of paper and paper products continues to slowly improve. Reports from many manufacturers' representatives, jobbers, and general paper merchants this week reflect increasing optimism. Heavy demand for paper, especially for book paper, continues above supply. Production is currently close to record volume at 103.4% of estimated capacity. Although no recent upward price revisions have been granted, it is expected that moderately higher prices will be granted by the OPA in the second quarter. A general price increase of 10% for the industry is apparently required to establish an equitable level.

Current reports reflect the presence of some speculative buying. At this date it is not large and the heavy demand for many types of paper largely represents actual requirements to meet long considered post-war plans for normal business purposes. Shortages continue most acute in printing, kraft, wrapping tissue, container, folding and set-up boxboard, and in building paper and board.

The index of general business activity for the week ended March 9 rose to 128.2, from 126.1 in the previous week, compared with 141.7 for the corresponding week in 1945. The index of paperboard production was 157.6, compared with 161.1 in the previous week and with 152.0 for the corresponding week in 1945.

Paper production for the week ended March 9 was estimated at 103.4%, compared with 87.7% for 1945, with 95.0% for 1944, with 89.8% for 1943, and with 101.9% for the corresponding week in 1942.

Paperboard production for the week ended March 9 was 93.0%, compared with 94.0% for 1945, with 95.0% for 1944, with 93.0% for 1943, and with 100.0% for the corresponding week in 1942.

Wholesalers' sales of paper in December declined 13% below November, 1945, and inventories declined 2%.

Pulpwood

The very serious short supply of lumber relative to the enormous need, makes it uncertain how much pulpwood can be harvested this year. Total receipts in December were 1,077,000 cords, compared with 1,225,000 cords in November and with 1,151,000 cords in December 1945. Total receipts in 1945 compared with 1944 showed a decrease of 1.3%. Southern receipts in January and the first half of February, 1946, the Department of Commerce states, are reported to be considerably under the level of the past few years. Bad weather, lack of equipment and shortage of woods labor are the unfavorable factors. OPA raised prices $1.40 per cord in February to stimulate production in the South.

Wood Pulp

Production of paper at the current high rate to meet the heavy demand this year, is largely dependent upon how much wood pulp can be imported from Sweden. Recent reports indicate that production in Sweden is approximately 65% of capacity. This is interpreted to indicate that Sweden would be able to export about 1,700,000 tons of wood pulp this year, including carryover stocks. In 1936, the United States imported from Sweden 1,014,809 tons of wood pulp and in 1937, 1,130,075 tons. In 1936, Norway supplied 125,256 tons, Finland, 311,009 tons, Newfoundland and Canada, 670,962 tons. Present indications are favorable for relatively heavy shipments to the U. S. this year from Canada, the Department of Commerce estimating that approximately 1,200,000 tons may be available. In 1945, Canada shipped 1,100,000 tons in 1944, 1,070,000 tons, and in 1943, 1,280,000 tons.

Rags

Demand for new cotton cuttings is active at this date. Mill buying is currently reported to be absorbing about all the limited supplies available. Prices are strong at ceiling levels.

Buying in the old cotton rag market is less active this week. Reports indicate that roofing felt mills are less active in the market on reports that supplies of imported rags will soon be available. Trading is currently in good volume and prices are steady.

Bagging

Buying of scrap bagging is reported good at this date, with supplies still limited. Demand for gunny is less active. Prices are unchanged.

Old Waste Paper

The old waste paper market is strong, with demand heavy for all grades. Major interest this week continues in folded news and in old corrugated. Prices are firm at ceiling levels.

Bristol Bulletin Describes pH Equipment

The Bristol Company, Waterbury, Conn., has announced a new bulletin, No. pH1302, describing its line of pH Control Instruments. Bristol Continuous pH Controllers and Recorders are described in detail including electrode assemblies and accessories. The bulletin includes engineering and technical information relative to pH theory and measurement. A variety of actual installations are described; with chart records, photographs, and flow diagrams included.

P-S Shows All-Purpose Rotary Union

An attractive new twelve-page catalog describing the newly improved "All Purpose" Rotary Union together with a reduced price list has been announced by Perfecting Service Company of 6140 Cottage Grove Avenue, Chicago 37, Illinois. This new catalog features engineering data and application studies for the use of the improved design for introducing gasses or liquids for cooling or heating into rotating machine members such as shafts, rolls, drums, and other rotating parts. These can be supplied from stock in both plain and syphon types.

LOBDELL "PURALOY" and PLATED ROLLS

Combat the Corrosive Action

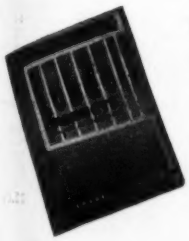
. . . of Dyes and Chemicals

Employed in many parts of the paper machine, chilled iron rolls are most extensively used in machine calender stacks. During casting, the "chilling" process produces an extremely hard surface, highly resistant to abrasion.

For excessively severe service, Lobdell has developed a series of special alloys, sold under the trade name "Puraloy." From 10 to 15 percent harder than ordinary chilled rolls, they are more resistant to abrasion and corrosion.

Since even these rolls will not always withstand the corrosive action of certain dyes and chemicals, Lobdell is prepared to supply chromium plated rolls for some conditions.

We will recommend the type roll best suited for use with the particular dyes or chemicals you use . . . no obligation.



TODAY . . . is none too soon to place your order. With the release of materials for general use, orders are being routed through our plant as received. If our catalog is not in your files . . . send for it, on your letterhead, please.

LOBDELL

COMPANY —— ESTAB. 1836

Built and sustained upon the rights to FREE, COMPETITIVE PRIVATE ENTERPRISE guaranteed by the Constitution of the United States

WILMINGTON 99, DEL.

make
APPLETON FELTS
good paper

Appleton Woolen Mills

APPLETON · WISCONSIN

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, March 20, 1946.

BLANC FIXE—Quotations on blanc fixe continue unchanged. Demand is reported fair. The pulp is currently quoted at $40 per ton, in barrels, at works; the powder is currently quoted at $60 per ton, f.o.b. works.

BLEACHING POWDER—All-over current demand continues active. Supply situation is reported good. Quotations are unchanged. Prices on bleaching powder range from $2.50 to $3.10 per 100 pounds, in drums, car lots, at works.

CASEIN—OPA maximum prices on processed acid-precipitated casein are as follows: 10,000 pounds or more, 24 cents per pound; 2,000 pounds, 24¼ cents per pound; less than 2,000 pounds, 24¾ cents per pound, f.o.b. shipping point. Imported 24 cents.

CAUSTIC SODA—Demand continues heavy. Deliveries continue slow due to labor conditions and short supply of steel drums. Solid caustic soda is quoted at $2.30 per 100 pounds; flaked and ground is quoted at $2.70 per 100 pounds.

CHINA CLAY—Quotations on china clay are unchanged. Current demand is reported heavy. Supply short. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay is quoted at from $12 to $22 per ton, at mine. Imported clay is quoted at from $13 to $25 per long ton, ship side.

CHLORINE—Demand active with supply adequate. Paper requirements fully met. Quotations unchanged. Chlorine is currently quoted at $1.75 per 100 pounds, in single unit tank cars, f.o.b. works.

ROSIN—No offerings and sales. "G" gum rosin is quoted at $6.74 per 100 pounds, in barrels, at Savannah; "FF" rosin at $6.70 per 100 pounds in barrels, at New York; seventy per cent gum rosin size at $6.95 per 100 pounds, f.o.b. works.

SALT CAKE—Prices on salt cake are reported unchanged for the current week. Current demand is relatively heavy. Domestic salt cake is quoted at $15 per ton, in bulk. Chrome salt cake is quoted at $16 per ton. All prices in car lots, f.o.b. point.

SODA ASH—Heavy demand continues for all-over requirements. Supply short. Bulk lot shipments steady. Bagged lots still slow. Quotations continue unchanged. Current prices, car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Corn receipts and shipments lower. Primary receipts 635,000 bushels against 1,406,000 last year. Prices steady. Starch prices continue unchanged. The pearl grade is quoted at $3.72 per 100 pounds; powdered starch at $3.83 per 100 pounds; all prices in bags, car lots, f.o.b. Chicago.

SULPHATE OF ALUMINA—Demand reported steady. Supply situation improving. Quotations continue unchanged. The commercial grades are quoted at from $1.15 to $1.25 per 100 pounds, in bags, car lots, f.o.b. works. The iron free is currently quoted at $1.75 per 100 pounds, in bags, at works.

SULPHUR—Quotations on sulphur continue to conform to prevailing market prices. Demand active. Annual contracts are quoted at $16 per long ton, f.o.b. mines; the price at Gulf Ports is $17.50 per long ton.

TALC—Prices on talc continue unchanged. Demand good. Domestic grades are currently quoted at from $16 to $21 per ton at mines; Canadian at $24 per ton.

MARKET QUOTATIONS

All market quotations, excepting those otherwise designated as official OPA maximum prices, are based on the manufacturers' price level as of October 1-15, 1941; maximum wholesale prices are based on the merchants' maximum prices for stipulated quantities at a quoted price to all customers of a like class, as shown by the merchant's sales records of goods delivered during March, 1942. A merchant's price list in effect in March 1942, showing quotations of actual shipments, will establish the current maximum prices.

Paper

(Delivered New York)

Standard News, per ton—			
Roll, contract	*$61.00	@	—
Sheets	69.00	@	—
* OPA Maximum Price.			
Kraft—per cwt.—Carload Quantities Zone A, Delivered			
Superstandard Wrapping	*$5.25	@	—
No. 1 Wrapping	*5.00	"	—
Standard Wrapping	*4.75	"	—
Standard Bag	*4.375	"	—
* OPA Manufacturers' Prices.			
Tissues—Per Ream—Carlots			
White No. 1	1.12½	"	—
White No. 1 M. G.	1.10	"	—
White No. 1½	1.00	"	—
White No. 2	.90	"	—
Anti-Tarnish M.F.	1.20	"	—
Colored	—	"	—
Kraft	.95	"	—
Manila	.90	"	—
Toilet—1 M. Sheets—Per Case			
Unbleached	4.25	"	—
Bleached	5.70	"	—
Unbl. Toilet, 1 M.	4.16	"	—
Bleached Toilet	5.70	"	—
Paper Towels, Per Case—			
Unbleached, Jr.	2.20	"	—
Bleached, Jr.	3.20	"	—
Manila—per cwt.—C. l. f. a.			
No. 1 Jute	11.25	@	—
No. 1 Manila Wrapping, 35 lb.	6.00	"	6.25
No. 2 Manila Wrapping, 35 lb.	5.75	"	6.00
Boards, per ton—			
News	*54.00	@	—
Chip	*54.00	@	—
Sgl. Mla. L.L. Chip	*65.00	@	—
White Pat. Coated	*79.00	@	—
Kraft Liners 50 lb.	*63.00	"	—
Binders Boards	84.00	"	116.00

* OPA Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items
Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Ext. No. 1	$39.10@$46.00	$40.25@$47.25
100% Rag	32.20 " 37.75	33.35 " 39.25
85% Rag	.... "	29.90 " 35.00
75% Rag	23.00 " 27.00	24.15 " 28.25
65% Rag	.... "	22.80 " 27.75
50% Rag	18.70 " 22.75	19.90 " 24.25
25% Rag	16.40 " 20.00	17.55 " 21.50

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items
Delivered in Zone 1:

	Bonds	Ledgers
No. 1	$10.55@$12.75	$11.70@$14.25
No. 2	9.65 " 11.75	10.80 " 13.25
No. 3	9.20 " 11.25	10.35 " 12.50
No. 4	8.90 " 10.75	10.05 " 12.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper
Delivered in Zone 1:

No. 1 Glossy Coated	$13.65@$15.50
No. 2 Glossy Coated	12.40 " 14.00
No. 3 Glossy Coated	11.60 " 13.25
No. 4 Glossy Coated	11.15 " 12.75
No. 1 Antique (watermarked)	10.25 " 11.75
No. 2 Offset	9.60 " 11.00
A Grade E. F.	9.35 " 10.75
A Grade S. & S. C.	9.60 " 11.00
B Grade E. F.	8.85 " 10.25
B Grade S. C.	9.10 " 10.50
C Grade E. F.	8.55 " 9.75
C Grade S. C.	8.80 " 10.00
D Grade E. F.	8.25 " 9.50
D Grade S. & S. C.	8.50 " 9.75

Ivory & India at $.50 cwt. extra.

Wood Pulp

OPA Maximum Prices and Canadian Manufacturers' Prices, Less Freight. Not Exceeding OPA Allowances.

Bl. Softwood Sulphite	$86.00
Unbl. Softwood Sulphite	74.00
Bl. Hardwood Sulphite	83.50
Unbl. Hardwood Sulphite	71.50
Bl. Mitscherlich	81.00
Unbl. Mitscherlich ..72.00 @	82.00
N. Bleached Sulphate	86.00
S. Bleached Sulphate	79.00
N. Semi-Bleached Sulphate	82.00
S. Semi-Bleached Sulphate	75.00
N. Unbl. Sulphate	73.00
S. Unbl. Sulphate	63.50
Bl. Soda	76.00
Unbl. Soda	72.00
Groundwood	50.00

Transportation Allowances

Applying to Producers of Wet Wood Pulp.

	Below 50% Air Dry Weight
Northeast	$13.50
Lake Central	13.50
Southern	16.00
West Coast (in area)	10.50
West Coast (out area)	16.50

	50%-80% Air Dry Weight
Northeast	$11.50
Lake Central	11.50
Southern	14.00
West Coast (in area)	9.50
West Coast (out area)	15.50

Applying to Producers of Dry Wood Pulp.

	Above 80% Air Dry Weight
Northeast	$8.50
Lake Central	8.50
Southern	11.00
West Coast (in area)	7.50
West Coast (out area)	13.50

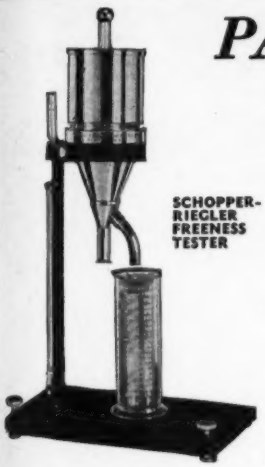
Should freight charges actually exceed these allowances, the difference may be added to the maximum prices.

Domestic Rags

New Rags
(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	6.50	@	7.25*
Silesias No. 1	—	"	5.75*
New Unbleached	6.75	"	7.50*
Blue Overall	—	"	5.50*
Fancy	—	"	3.50*
Washables	—	"	3.00*
Bleached Khaki Cuttings	—	"	4.25*
Unbleached Khaki Cuttings	—	"	3.50*

* OPA Maximum Prices.



PAPER TESTERS

SCHOPPER-RIEGLER FREENESS TESTER

SCHOPPER TYPE
TENSILE
FREENESS
FOLDING
CANADIAN STANDARD FREENESS

DEAD WEIGHT MICROMETERS
BASIS WEIGHT SCALES
NEWS PENETRATION
POCKET SCALES MICROMETERS
HINDE & DAUCH CRUSH
TEAR-BURST-STIFFNESS

TESTING MACHINES Inc.
429 W. 42nd St., New York 18, N. Y.

Old inaccurate Scales, Micrometers and other testers recalibrated and made over like new.

J. Andersen & Company

21 East 40th Street

NEW YORK

Importers of Pulp

BLEACHED AND UNBLEACHED SULPHITE, KRAFT PULP AND GROUND WOOD

JUST A MOMENT

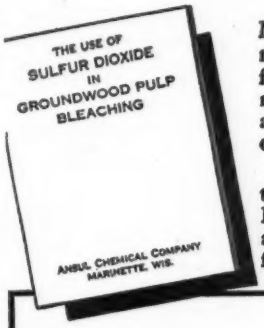
are you going to

BLEACH GROUNDWOOD PULP ? *Use*

ANSUL Liquid Sulfur Dioxide

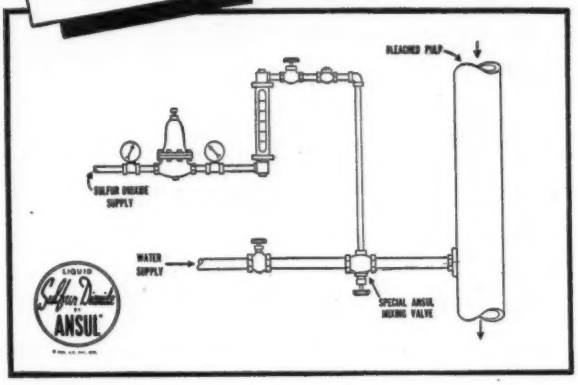
AFTER *Bleaching*

It's SIMPLE, INEXPENSIVE ...POSITIVE!



Maximum permanent brightness is provided through acidification of the pulp and elimination of excess peroxide . . . also permits removal of colored iron compounds.

A complete, authentic treatise on the use of ANSUL Liquid Sulfur Dioxide is available to you on request. Write for it today.



Here are the advantages of using Ansul Liquid Sulfur Dioxide:

1. Combines acidifying, reducing and anti-oxidizing steps in one.
2. Eliminates the cumbersome handling of acid and salt or solutions of varying concentration.
3. Simple and positive finger-tip control which is practically automatic.
4. Immediate starting and stopping of operation with elimination of waste.
5. Reduces operating and maintenance costs.
6. Equipment is inexpensive, permanent and easy to install.
7. Guarantees absolute purity and freedom from contamination.

ANSUL CHEMICAL COMPANY
INDUSTRIAL CHEMICALS DIVISION, MARINETTE, WIS.
Eastern Office: 60 E. 42nd St., New York City

Old Rags

White, No. 1—			
Repacked	*3.80	@	—
Miscellaneous	*3.20	"	—
White, No. 2—			
Repacked	*2.90	"	—
Miscellaneous	*2.65	"	—
Thirds and Blues—			
Repacked	*2.20	"	—
Miscellaneous	*1.30	"	—
Roofing Rags—			
No. 1	*1.55	"	—
No. 2	*1.45	"	—
No. 3 (bagging)	*1.35	"	—
No. 4	*1.35	"	—
No. 5A	*1.35	"	—
Old Manila Rope	5.75	"	—

* OPA Maximum Prices.

Foreign Rags

Pre-War Quotations

All Prices Nominal

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—
No. 4 White Linens	2.25	"	3.25
No. 1 White Cotton	4.25	"	4.75
No. 2 White Cotton	3.25	"	3.75
No. 3 White Cotton	2.50	"	3.00
No. 4 White Cotton	1.90	"	2.20
Extra Light Prints	2.00	"	2.40
Ord. Light Prints	1.75	"	2.15
Med. Light Prints	1.55	"	1.95
Dutch Blue Cottons	2.25	"	2.50
French Blue Linens	3.00	"	—
Checks and Blues	2.00	"	—
Linsey Garments	1.90	"	2.00
Dark Cottons	1.50	"	1.60
Old Shopperies	1.30	"	1.45
New Shopperies	1.45	"	1.50
French Blues	2.25	"	2.50

BAGGING

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.25	@	3.30
Wool Tares, light	3.25	"	3.50
Wool Tares, heavy	3.50	"	3.75
Bright Bagging	3.25	"	3.50
Manila Rope—			
Foreign	—	"	—
Domestic	*5.75	"	—
Jute Threads	5.50	"	—
No. 1 Sisal Strings	*4.00	"	—
Mixed Strings	1.50	"	—

* OPA Maximum Prices.

Old Waste Papers

(F. o. b. New York)

OPA Maximum Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Envelope Cuts	3.12½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, one cut	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Mixed Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
Mixed Groundwood Colored Shavings	.90	"	—
Overissue Magazines	1.67½	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
Mixed Books	1.10	"	—
No. 1 White Ledger	2.30	"	—
No. 2 Mixed Ledger, colored	2.00	"	—
New Manila Envelope Cuttings, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
Extra Manilas	1.95	"	—
Mixed Kraft, Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
Triple Sorted, No. 1 Brown Soft Kraft	2.50	"	—
New 100% Kraft Corrugated Cuttings	2.25	"	—
No. 1 Assorted Old Kraft	1.75	"	—
New Jute Corrugated Cuttings	.90	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.40	"	—
Box Board Cuttings	.72½	"	—
White Blank News	1.65	"	—
Overissue News	1.10	"	—
No. 1 News	1.00	"	—
No. 1 Mixed Paper	.95	"	—
Old Corrugated Containers	.82½	"	—
Mill Wrappers	1.10	"	—

Twines

All Prices Nominal

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—			
India	.21	@	—
White Hemp	.21	"	—
Fine Polished—			
Fine India	.26	"	—
Unpolished—			
Box	.17¼	"	—
Paper Makers	.17	"	—
Tube Rope	.19	"	—
Wall Paper	.20½	"	—
Wrapping	.23	"	—
Soft Fiber Rope	.19	"	—
Cotton	.25	"	—

(Hard Fiber)

Medium Java	.18	"	—
Mex. Sisal	.16	"	—
Manila	—	"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill)

Shirt Cuttings—	
New White No. 1	.07¼
New White No. 2	.05¾
Light Silesias	.05¾
Black Silesias, soft	.03¾
New Unbleached	.07½
Washable Prints	.04¼
Washable No. 1	.03
Blue Overall	.05½
Cottons—According to grades—	
Washable Shredding	.01¾
Fancy Percales	.04¾
New Black Soft	.03¼
Khaki Cuttings—	
Unbleachable Cotton Cuttings	.03½
Bleachable Cotton Cuttings	.04¼
Men's Corduroy	.03½
Ladies' Corduroy	.03
Cottonades	.03¼

Domestic Rags (Old)

White No. 1—Repacked	3.80	@	—
Miscellaneous No. 1	3.20	"	—
Miscellaneous No. 2	2.65	"	—
White No. 2—Repacked	2.90	"	—
Thirds and Blues—			
Miscellaneous	1.80	"	—
Repacked	2.20	"	—
Black Stockings—			
(Export)	Nominal		
Roofing Stock—			
Foreign No. 1	Nominal		
Domestic No. 1	1.55	"	—
Domestic No. 2	1.45	"	—
Roofing Bagging	1.35	"	—
Old Manila Rope	5.75	"	—

Bagging

(F. o. b. Phila.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.00	@	3.50
No. 1 Clean Bright—			
Sisal Strings	.04	"	—
No. 2 Clean Bright—			
Sisal Strings	.03	"	—
Sisal Jute	.02½	"	.02¾
Scrap—			
No. 1	3.25	"	3.50
No. 2	1.75	"	1.80
Wool Tares, heavy	4.00	"	4.25
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	3.75	"	4.00

Old Papers

(F. o. b. Phila.)

OPA Maximum Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
Soft White Shavings, one cut	2.50	"	—
White Blank News	1.65	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 White Ledger	2.30	"	—
No. 2 Ledger, colored	2.00	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
Overissue Magazines	1.67½	"	—
New Manila Envelope Cuttings	2.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.95	"	—
Box Board Cuttings	.72½	"	—
Kraft Corrugated Cuttings	2.25	"	—
Old Corrugated Containers	1.40	"	—
No. 1 News	1.00	"	—

BOSTON

Old Papers

(F. o. b. Boston)

OPA Maximum Prices, Baled

No. 1 Hard White Shavings, unruled	2.87½	@	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
Hard White Envelope Cuts, one cut	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White and Colored Tabulating Cards	2.25	"	—
Ground Wood Tabulating Cards	1.35	"	—
White Blank News	1.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.95	"	—
Overissue News	1.10	"	—
Box Board Cuttings	.72½	"	—
New Corrugated Cuttings, Kraft	2.25	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.40	"	—
Jute Corrugated Cuttings	1.07½	"	—

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	2.75	@	2.90
Sisal Rope No. 1	*4.75	"	—
Sisal Rope No. 2	* —	"	4.00
Mixed Rope	1.60	"	—
Transmission Rope—			
Foreign	(nominal)		
Domestic	2.75	"	3.00
Manila Rope—			
Foreign	(nominal)		
Domestic	5.75	"	—
Soft Jute Rope	4.50	"	5.00
Jute Carpet Threads	3.00	"	3.50
Bleachery Burlap	8.50	"	9.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	3.00	"	3.25
South America	—	"	3.25
Wool Tares—			
Foreign	(nominal)		
Domestic	4.25	"	—
Aust. Wool Pouches	—	"	3.65
New Zealand Wool Pouches	—	"	3.50
New Burlap Cuttings	4.75	"	5.00
Heavy Baling Bagging	4.00	"	4.25
Paper Mill Bagging	2.50	"	3.00
No. 2 Roofing Bagging	1.35	"	—

* OPA Maximum Prices.

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.04½	@	.04¾
Fancy Percales	.04¼	"	.05
New White No. 1	.06¾	"	.07
New Light Flannelettes	.05½	"	.06
Canton Flannels, Bleached	.06	"	.06¼
Underwear Cutters, Bleached	.06¼	"	.06¾
Underwear Cutters, Unbleached	.05¾	"	.06
Silesias No. 1	.06	"	.06¼
New Black Silesias	.03	"	.03¼
Red Cotton Cuttings	.03½	"	.04
Soft Unbleached Blue Cheviots	.06½	"	.06¾
	.05½	"	.06
Fancy	.02¾	"	—
Washable	.02¾	"	—
Khaki Cuttings	.02¾	"	.03
O. D. Khaki	.03½	"	.03¾
Corduroy	.03½	"	.03¾
New Canvas	.06¼	"	.06¾
B. V. D. Cuttings	.06¼	"	.06¾

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—Repacked	3.80	@	—
Miscellaneous	3.20	"	—
White No. 2—Miscellaneous	2.65	"	—
Twos and Blues, Repacked	2.20	"	—
Old Blue Overalls	2.25	"	2.50
Thirds and Blues, Repacked	2.20	"	—
Miscellaneous	1.80	"	—
Black Stockings	3.50	"	4.00
Roofing Stock—			
No. 1	1.55	"	—
No. 2	1.45	"	—
No. 3	1.35	"	—
No. 4	1.35	"	—
No. 5, Quality A	1.85	"	—
Quality B	1.80	"	—
Quality C	.95	"	—
Old Manila Rope	5.75	"	—

* OPA Maximum Prices.

Foreign Rags

(F. o. b. Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
Dutch Blues	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)

CHICAGO

Waste Paper

(F. o. b. Chicago)

OPA Maximum Prices, Baled

Shavings—			
No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
No. 1 White Ledger	2.30	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
White Blank News	1.65	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
No. 1 Assorted Old Kraft	1.75	"	—
Overissue News	1.10	"	—
No. 1 News	1.00	"	—
No. 1 Mixed Paper	.95	"	—
No. 1 Roofing Rags	1.55	"	—
No. 1 Roofing Bags	1.45	"	—